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By US Mail

Arizona Corporation Commission
Docket Control
1200 W. Washington St.
Phoenix, Arizona 85007

Docket # E-00000C-11-0328 – Smart Meters
Re: How often wireless smart meters actually transmit

Dear Commissioners:

During the March 23rd hearing, one Arizona Utility stated that it only receives transmissions 14 times a day from each of their smart meters. Another Utility stated that they receive data every 15 minutes. These are low-end numbers, and not representative of the current technologies. As evidenced by the September 8, 2011 hearing when Tucson Electric/Unisource disclosed that their AMR meters transmit every 30 seconds, or 2880 times a day.

There have been complaints in other states that utilities there did not fully disclose how often their meters actually transmit. Some utilities were apparently only stating how often they read their meters, but omitted other types of transmissions. From a human health perspective, the informational content of a wireless transmission is irrelevant. It is the actual act of transmission that matters. Otherwise, there is no distinction.

Following these complaints, on October 18, 2011 Administrative Law Judge Yip-Kikugawa directed the three largest California utilities to make specific and detailed disclosures. The response from Pacific Gas & Electric is enclosed.

In Table 2-1 of the response, it is stated that each meter is read six times a day. However, the total number of transmissions from each meter is typically 10,000 a day, or once every 8.6 seconds.

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The PG&E system is a “mesh network” where some of the meters act as relay stations. These meters can transmit much more often. According to PG&E’s Table 2-1 (right side), they may transmit as often as 190,000 times a day or about twice a second. It is not possible to know which of the meters serve as relays, and it may change over time which of them does. Mesh networks are state of the art and are being deployed by many utilities, including utilities in Arizona.

Therefore, the public health is best served by limiting these transmissions as much as possible, especially since most, if not all, of the desired goals can be accomplished with much less.

However, we must stress that limiting the transmissions is not a viable alternative to a medical opt-out for people with electrical hypersensitivities. **People with EHS must be allowed to have a non-communicating electromechanical meter.** There is no other choice.

Submitted on behalf of:

Safer Utilities Network
P.O. Box 1523
Snowflake AZ 85937

Enclosed (1): Pacific Gas and Electric Company’s response to Administrative Law Judge’s October 18, 2011 Ruling Directing it to File Clarifying Radio Frequency Information (pages 1 and 5 only)

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company
for Approval of Modifications to its SmartMeter™
Program and Increased Revenue Requirements to
Recover the Costs of the Modifications (U 39 M)

Application 11-03-014
(March 24, 2011)

**PACIFIC GAS AND ELECTRIC COMPANY'S RESPONSE TO
ADMINISTRATIVE LAW JUDGE'S OCTOBER 18, 2011
RULING DIRECTING IT TO FILE CLARIFYING RADIO
FREQUENCY INFORMATION**

I. INTRODUCTION

On October 18, 2011, Administrative Law Judge (ALJ) Yip-Kikugawa issued *Administrative Law Judge's Ruling Seeking Clarification* from Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas) (collectively, the utilities or IOUs), in the above-captioned proceeding. Specifically, the Ruling directs the utilities to file clarifying information concerning the frequency and duration of radio frequency (RF) emissions from wireless smart meters by November 1, 2011. PG&E hereby timely responds to the Ruling.

II. PG&E'S SMARTMETERS™ COMPLY WITH FEDERAL COMMUNICATIONS COMMISSION (FCC) RADIO FREQUENCY (RF) EMISSIONS STANDARDS

PG&E's SmartMeters™ RF emissions are substantially below the Federal Communications Commission's (FCC) limits for radio transmitters of all types, including SmartMeters™. Indeed, and as PG&E noted in its Response to the Division of Ratepayer Advocates' *Motion to Amend the Scope of the Proceeding to Include Data on RF Emissions and to Order PG&E To Serve Supplemental Testimony on the Costs of an Analog Meter*, "the CPUC has previously found that PG&E's SmartMeters™ comply with FCC RF emissions standards. Specifically, the Commission found that '[a]ll radio devices in PG&E's SmartMeters™ are

Question 2:

How many times in total (average and maximum) is a smart meter scheduled to transmit during a 24-hour period?

Response 2:

Electric: Table 2-1 presents scheduled electric SmartMeter™ system messages and their durations. As noted in Response 1, the information presented applies only to the 900 MHz radio. Table 2-1 presents data for all “scheduled” messages; i.e., those inherently required to sustain communications in the network that occur routinely without user intervention. “Non-Scheduled” messages created only at non-recurring times are addressed in Response 3.

TABLE 2-1

Electric System Message Type [a]	Transmission Frequency Per 24-Hour Period: Average	Transmission Frequency Per 24-Hour Period: Maximum (99.9 th Percentile)
	[b]	[c]
Meter Read Data	6	6
Network Management	15	30
Time Synch	360	360
Mesh Network Message Management	9,600	190,000
Weighted Average Duty Cycle	45.3 Seconds ⁴	875.0 Seconds

The electric system message types are defined as:

- Meter Read Data refers to the messages generated by each meter to transmit energy usage data.
- Network Management refers to network tasks that need to be performed to maintain the health of the network (e.g., route establishment).
- Time Synch refers to network administration messages needed to update the internal clock in the NIC.
- Mesh Network Message Management refers to activities required to forward routed messages.

Gas: Table 2-2 presents scheduled gas SmartMeter™ system messages and their durations.

TABLE 2-2

Gas System Message Type [a]	Transmission Frequency Per 24-Hour Period: Average	Transmission Frequency Per 24-Hour Period: Maximum
	[b]	[c]
Meter Read Data	4.228	4.305
Weighted Average Duty Cycle	0.676 Seconds	0.689 Seconds

⁴ As stated in Response 1, a small number of electric SmartMeters™ communicate somewhat longer than 45 seconds-per-day, which resulted in an overall mean duration of approximately 62 seconds.