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**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 (U 39 M)  
REPLY TO PARTIES' PROTESTS/RESPONSES TO ITS  
APPLICATION FOR APPROVAL OF MODIFICATIONS  
TO THE SMARTMETER™ PROGRAM**

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Dated: May 5, 2011

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**I. INTRODUCTION**

On March 24, 2011, Pacific Gas and Electric Company (PG&E) filed its Application before the California Public Utilities Commission (CPUC or Commission) for approval of its “radio-off” SmartMeter™ proposal. PG&E’s Application was filed pursuant to the Commission President Peevey’s directive during the March 10, 2011 CPUC Public Business Meeting that PG&E “prepare a proposal for [CPUC] consideration that will allow some form of opt-out for customers who object to these devices at reasonable cost, to be paid by the customers who choose to opt-out.” In compliance with this directive, PG&E filed an Application seeking modifications to its SmartMeter™ Program to offer residential customers the option to request that PG&E disable the radio frequency (RF) wireless communication radio/module in their electric and gas SmartMeters™. PG&E’s “radio-off” Application strikes an appropriate balance between maintaining the benefits and reliability of the SmartMeter™ system for the millions of customers that have received and want to take advantage of the new technology, while also responding to some customers who are concerned about wireless RF communications from the SmartMeter™ device.

On April 25, 2011, PG&E received ten Protests/Responses in response to its radio-off Application. PG&E is pleased that the Division of Ratepayer Advocates (DRA) and The Utility Reform Network (TURN) support “in concept” PG&E’s radio-off proposal, and believe that it may “offer an adequate solution for customers” concerned about RF communications from SmartMeters™. (See DRA Response, p.1; see also, TURN Protest, p.1.) By this Reply, PG&E responds to the various issues and concerns raised in the Protests/Responses.

## **I. DISCUSSION**

### **A. PG&E’s Forecasted Radio-Off Proposal Costs and Associated Ratemaking Treatment are Reasonable and Supported By PG&E’s Testimony and Detailed Workpapers**

PG&E’s radio-off proposal is a modification to PG&E’s existing authorized SmartMeter™ Program which, if approved, will result in costs incremental to the SmartMeter™ Program costs and budget authorized by the CPUC in Decisions 06-07-027 and 09-03-026. PG&E’s forecasted costs in this proceeding reflect its reasonable estimation of the incremental costs necessary to implement the radio-off option in a manner that ensures continued reliability of PG&E’s SmartMeter™ system, and facilitates a positive customer experience for those customers choosing the radio-off option as well as those customers who continue with the standard SmartMeter™ installation. A number of parties make general statements challenging the reasonableness and incrementality of PG&E’s forecasted costs and express their intention to look closely at PG&E’s cost assumptions. PG&E agrees that the reasonableness of its forecasted costs should be addressed within the scope of this proceeding. In addition to the descriptions of costs in the Prepared Testimony, PG&E has detailed workpapers to support each of the components of its forecasted program costs. On April 28, 2011, PG&E circulated a Notice of Availability of its supporting workpapers and PG&E will provide such detailed workpapers to any requesting party.

Based on a number of parties' focus on the reasonableness of PG&E's forecasted costs for customer communications/outreach, PG&E clarifies that the costs for this line item include significantly more activity than communications and outreach to customers. The costs outlined in Chapter 2C are incremental costs that encompass both: (1) customer communications and outreach (e.g., educating customers on the radio-off choice) and (2) operational work (e.g., training of customer service representatives to handle opt-out inquiries and requests, and labor necessary to record and process the opt-out requests to ensure proper billing). The majority of the costs forecasted for customer communications/outreach are in the latter category. PG&E's workpapers demonstrate that the customer communications costs are reasonable and are related to activity that has not been previously proposed by PG&E in past CPUC proceedings.

A Protest also raises questions about the incrementality of PG&E's Information Technology (IT) costs. Like customer communications/outreach costs, PG&E is prepared to demonstrate the incrementality of the forecasted IT costs. The IT costs included in PG&E's Application are for one-time changes to PG&E's various IT systems to enable the opt-out functionality and implement the program as proposed. (PG&E Prepared Testimony, pages 2B-4 to 2B-6.) PG&E has not proposed such IT changes in past rate cases.

PG&E's proposed ratemaking treatment to recover its forecasted costs is reasonable. In compliance with Commissioner Peevey's directive, PG&E proposes that the costs of the radio-off program be paid by customers selecting radio-off and not by customers who select the standard SmartMeter™ installation. PG&E's proposal to establish a balancing account to track expenses and revenue associated with its proposed radio-off program is appropriate given that PG&E's actual expenses will vary dependent upon a number of issues beyond PG&E's control, including the number of customers selecting the radio-off proposal and the population density of such customers. The two-way balancing account provides PG&E with the flexibility to accommodate potential customer participation above or below the forecasted participation. This is an important feature of PG&E's cost recovery proposal given the difficulty in estimating exactly how many customers will choose the radio-off option. In addition to allowing PG&E to

accommodate customer participation at varying levels, a two-way balancing account also ensures that ratepayers only fund actual expenses.

PG&E should not be subject to after-the-fact reasonableness review of its approved revenue requirements when it is offering this proposed radio-off option. Given that the CPUC has ordered PG&E to propose a SmartMeter opt-out alternative, and that any actual radio-off option implemented by PG&E will reflect the CPUC's decision on the reasonableness of its forecast costs in this proceeding, PG&E should not be subject to further uncertainty of cost recovery. The reasonableness of PG&E's radio-off proposal and forecasted costs are the subject of this proceeding and will be addressed here before PG&E incurs costs necessary to implement the proposal. Once PG&E sets forth on a course of action in compliance with CPUC directives and authorized revenue requirements, PG&E should be permitted to move forward in the same way it would under normal CPUC ratemaking, and not be exposed to uncertainty related to recovery of its radio-off program expenditures.

**B. PG&E's Proposal to Disable the Electric and Gas Communications Modules Manually is Reasonable Given the Current Limitations on Remote Turn-Off and the Fact that the Manual Turn-Off Field Visit Serves Multiple Purposes**

A number of parties, in the context of challenging forecasted costs, have questioned "the necessity for a manual shut-off of the meters as opposed to an automated shut-off." (TURN Protest, p.1.) PG&E's proposal to disable manually the electric and gas communications modules is reasonable and efficient.

PG&E cannot remotely or automatically disable the radio transmissions in PG&E's gas SmartMeter™ module because the gas module is designed only to transmit signals. Because it cannot receive signals, it cannot be disabled or enabled remotely. Due to this hardware limitation, the only method of disabling the radio communication device in the gas module is to turn the radio off manually at the customers' premises with the use of a programming tool. The handheld programming tool must be operated by a technician in close proximity to the gas module.

For PG&E's electric SmartMeters™, the ability to remotely disable the radio communication device is dependent on software development, testing and certification. PG&E may be able to remotely disconnect the radio communication device in PG&E's electric SmartMeters™ with a future firmware upgrade, but firmware to remotely disable or remotely enable radio transmissions has not been received, tested or certified by PG&E.

Furthermore, PG&E's proposal requires a field visit to allow PG&E to validate that the radio communications modules are disabled and to mark the radio-off meters with a visible identifier such as a sticker.

**C. PG&E's Estimated Labor Time for the Field Visits to Manually Disable and Enable the Radio Communication Modules is Reasonable**

PG&E forecasts that it will take a PG&E field technician a field visit with labor time of approximately 1.5 hours to turn off the radio in the metering devices. Some parties expressed skepticism as to the amount of time PG&E estimated that it would take to disable the radio. (See, e.g. Aglet Protest, p.2.) PG&E's 1.5 hour forecast includes travel time to and from the customer premises; turning the radio off with the hand-held programming tool; confirming that the radio has been disabled on the meter; physically marking the customer meter location indicating the radio communication device has been disabled; and communicating directly with the customer that the radio has been disabled or, in the customer's absence, leaving a written message. PG&E's 1.5 hour estimate to complete all of the above activity is reasonable.

**D. The Customer Choice About Whether to Select the SmartMeter™ Radio – Off Option Should Reside with the Individual Customer not Local Jurisdictions**

Some of the Protests filed by local government jurisdictions make the misguided argument that local governments should have the ability to “opt-out” on behalf of all residents within a local jurisdiction without regard for the desire of the individual customers. (*See e.g., Protest of Town of Fairfax, et al.*, stating that PG&E's proposal should include the right of local governments to exercise an opt-out on behalf of the residents of their jurisdictions.”) (P. 8.) This

proposal by the Town of Fairfax and others is anti-customer choice and would allow local governments to usurp an individual customer's right to decide whether he/she wants to participate in the radio-off alternative. As proposed in PG&E's Application, every residential customer can decide whether to choose the radio-off alternative. To ensure that the choice stays with the customer, proposals to allow jurisdiction-wide opt-outs should be rejected.

**E. Some Protests Improperly Raise Issues Beyond the Scope of PG&E's Radio-Off Application That Have Previously Been Raised and Addressed in Prior CPUC Proceedings**

**1. SmartMeter™ Accuracy Has Been Addressed by the CPUC's Independent Assessment Conducted by The Structure Group and Parties Should be Prevented from Again Raising SmartMeter™ Accuracy as an Issue In this Proceeding**

PG&E's Application is a compliance filing addressing the narrow issue of whether PG&E's proposed radio-off SmartMeter™ option and associated costs are reasonable and should be approved. PG&E's Application is not an opportunity for parties to reopen issues that have been previously raised and addressed in prior Commission proceedings. A number of parties attempt to divert the focus away from the development of a reasonable opt-out proposal by revisiting allegations of accuracy issues that have previously been resolved. The CPUC should ensure that parties are not permitted to improperly expand the scope of PG&E's radio-off Application.

The CPUC, through the independent assessment conducted by The Structure Group, has previously addressed concerns raised about potential systemic problems with the accuracy of PG&E's SmartMeters™. On March 30, 2010, the CPUC retained The Structure Group to conduct an end-to-end accuracy assessment of PG&E's SmartMeter™ Program. On September 22, 2010, the CPUC issued *Assigned Commissioner's Ruling Regarding the Consultant's Evaluation of PG&E's SmartMeter Program*, publicly releasing The Structure Group's evaluation. The Structure Group Report found that "PG&E's SmartMeters™ are accurately recording electric usage within acceptable CPUC tolerances, and are being accurately utilized in

Customer billing.” (P. 13.) Moreover, the City and County of San Francisco questioned the accuracy of PG&E’s SmartMeters™ and related bills in a Petition to Modify the CPUC Decision authorizing PG&E’s SmartMeter™ Program. The Commission denied CCSF’s Petition and stated that “there are no facts that show that the SmartMeters are less accurate than current meters or that the billing system is now generating fewer accurate bills.” (See D.10-12-031, at p.1.)

As the CPUC is aware, on Monday (May 2, 2011), PG&E publicly announced that it would issue refunds to customers due to a rare defect that affects less than one tenth of one percent (0.08 percent) of SmartMeters™ supplied to PG&E by meter manufacturer Landis+Gyr. Landis+Gyr’s Chief Operating Officer for North America stated that they are “confident that [they] have identified the small population of meters with this defect based on the diagnostic flags and extensive additional testing in [their] labs and in the field.” (PG&E Press Release, PG&E To Issue Customer Refunds, May 2, 2011.) The extremely limited defect that PG&E identified and disclosed publicly does not negate The Structure Group’s determination that PG&E’s SmartMeters™ do not have systemic accuracy issues.

**2. The CPUC Has Previously Found that PG&E’s SmartMeters Comply with FCC RF Safety Standards and That SmartMeter™ RF Emissions Levels are Well Below the Emissions Levels of Many Common Household Devices and These Issues Should Not be Revisited in this Proceeding**

PG&E’s Application seeking authority to offer residential customers a radio-off SmartMeter™ option is not another opportunity for parties to repeat arguments that have previously been raised and decided by the Commission. A number of parties improperly attempt to reshape and expand the scope of this proceeding by repeating erroneous allegations about whether PG&E’s SmartMeters™ comply with Federal Communications Commission (FCC) standards and whether SmartMeter™-related RF emissions cause negative health impacts. These issues are not within the scope of PG&E’s Application, and they have already been addressed by the Commission in prior proceedings.

For example, EMF Safety Network's (EMF Network) Protest repeats many of the same arguments that it made in its prior Application to the CPUC (A.10-04-018) seeking to halt SmartMeter™ deployment based on allegations concerning FCC standards and health impacts caused by SmartMeter™ RF emissions. In that proceeding, the Commission found that "[a]ll radio devices in PG&E's Smart Meters are licensed or certified by the FCC and comply with all FCC requirements." (See, D.10-02-001, p.14, FoF 2.) The Commission further found that "RF emissions from SmartMeters that the EMF Safety Network wishes the Commission to investigate are one/ six thousandth of the federal health standard at a distance of 10 feet from the Smart meter and far below the RF emissions of many commonly used devices." (Id., p.1.) Based on the totality of evidence in the record in that proceeding, the Commission concluded that it was "not reasonable to reopen [its] prior Smart Meter decisions to address the alleged health impacts produced by RF emissions from Smart Meters." (Id.) EMF Network, and other parties, cannot use this proceeding as a back door to reargue issues that have been conclusively decided by this Commission.

Given the EMF Network Commission precedent, the CPUC should reject Wilner's request that the CPUC order PG&E to conduct a SmartMeter™ health study. (See Wilner Protest, p.2 and *Wilner Motion to Require PG&E to Conduct SmartMeter Health Study*, dated May 3, 2011). PG&E is not a medical health expert. Moreover, the FCC has exclusive jurisdiction to regulate RF emissions and establish safe RF emissions standards. The FCC has determined that PG&E's SmartMeters™ comply with FCC standards for safe RF emissions levels. In addition, California Council of Science and Technology (CCST) recently issued the final version of an independent study entitled "Health Impacts of Radio Frequency From Smart Meters" assessing whether existing FCC standards are sufficiently protective of public health. (March 31, 2011). The CCST Report found that the "FCC standard provides an adequate factor of safety against known RF induced health impacts of smart meters and other electronic devices in the same range of RF emissions." (p.7). The CPUC has appropriately relied on the FCC as the federal agency with expertise on RF emissions and health impacts. Because Wilner's request is

in direct conflict with FCC jurisdiction as well as the Commission’s determination in the EMF Network Decision that it is “not reasonable to reopen prior Smart Meter decisions to address the alleged health impacts produced by RF emissions from Smart Meters” (D.10-02-001), Wilner’s request and Motion should be denied.

Beyond the prior CPUC proceeding addressing SmartMeter™-related RF issues, the FCC has expressly acknowledged its regulation of SmartMeter™-related RF and confirmed that PG&E’s SmartMeters™, individually as well as when multiple SmartMeters™ are located adjacent to one another, comply with safe RF emissions levels. (See, FCC letter to Ms. Cindy Sage, dated August 6, 2010, stating that “even multiple [SmartMeter™] units or “banks” of meters in the same location will be compliant with public exposure limits....”) (Exhibit A.) The Commission properly reviewed and relied on the FCC’s regulation and expertise on safe RF emissions levels. The issues of SmartMeters’™ compliance with FCC safe RF emissions standards has been addressed by the Commission and should not be revisited in this proceeding.

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### III. CONCLUSION

Pacific Gas and Electric Company appreciates the opportunity to provide these Reply Comments and looks forward to working with the Commission and interested stakeholders to help facilitate final approval of its SmartMeter™ radio-off proposal to provide an option for customers who are concerned about RF communications, while maintaining SmartMeter™ benefits for the majority of its customers consistent with the State's overall energy policy and development of the Smart Grid.

Dated: May 5, 2011

Respectfully Submitted,

ANN H. KIM  
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By: \_\_\_\_\_ /s/  
CHONDA J. NWAMU

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PACIFIC GAS AND ELECTRIC COMPANY

EXHIBIT A

FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554

AUGUST 6, 2010

LETTER TO MS. CINDY SAGE



Federal Communications Commission  
Washington, D.C. 20554

August 6, 2010

Ms. Cindy Sage  
Sage Associates Environmental Consultants  
1396 Danielson Road  
Montecito, CA 93108-2857

Dear Ms. Sage:

Thank you for your letter of March 15, 2010, in which you request that we review compliance with FCC radiofrequency (RF) exposure limits for the "Smart Meter" technology being implemented by utilities across the country. In particular, you expressed concern about multiple adjacent Smart Meter installations used to service multiple dwellings such as condominiums, and the effect of increased data traffic on exposure from collector or controller units.

The FCC Equipment Authorization (EA) program in the Office of Engineering and Technology has taken a very conservative approach to RF exposure compliance for low-power network devices such as Wi-Fi base stations and Smart Meter transceivers. For such devices that are not expected to be used close to the body, it is generally unnecessary to perform routine specific absorption rate (SAR) evaluations as field strength or power density is a sufficient and appropriate measure of exposure. The maximum field strength at a distance can be derived from the effective radiated power (ERP). Also, FCC field strength limits, like the SAR limits, are time-averaged. Accordingly, for devices that will not be used within 20 centimeters of the body, we rely on the "source-based" time-averaged ERP and require that it be less than our specified values of 1.5 or 3 watts, depending on frequency,<sup>1</sup> in order to ensure compliance with our exposure limits. This does not imply that FCC exposure limits will be exceeded at distances less than 20 cm, but only that detailed evaluation of the SAR is not required if the 20 cm separation distance can be maintained.

It is useful in considering this issue to recognize that the power level specified on the Grants of Equipment Authorization issued by the EA program is the peak power as this is the power relevant to interference concerns. For exposure evaluations, however, the average power is relevant, which is determined by taking into account how often these devices will transmit. Since the purpose of these devices is to provide very infrequent information they transmit in occasional bursts. Thus, for exposure purposes the relevant power is maximum time-averaged power that takes into account the burst nature of transmission, and based on the typical maximum time-averaged transmitter power for many of these devices, they would generally be compliant with the local SAR limit even if held directly against the body.

With respect to multiple adjacent Smart Meter installations, since the antennas for each device are mounted individually on each utility meter, the separation distance from people for most of the transmitting antennas is relatively large compared to 20 cm and the

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<sup>1</sup> See Section 2.1091(c) of the FCC rules.

meters' contributions to the total potential exposure at any location are small, as only the nearest few transmitters can add meaningfully to the total. Further, as a practical design matter, when several of these meters are placed in a cluster, they have to communicate with a single controller. In order to ensure that the controller receives the information properly, only one transmitter can communicate with the controller at a time, eliminating the potential for exposure to multiple signals at the same time.

The general issue of cumulative exposure from an arbitrary group of transmitter installations or from all transmitters distributed in the environment can appear to be complex, but as discussed, the need for orderly communications requires that a few sources normally dominate. In addition, the exponential decrease in signal strength over distance and additional signal losses due to non line-of-sight conditions for distant sources ensures that only the contributions of nearby transmitters are significant.

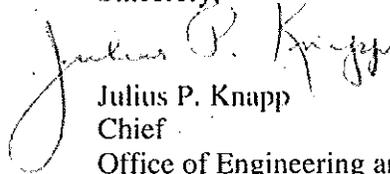
In summary, compliance for Smart Meters is determined according to the operating and installation requirements of each type of meter during equipment certification, and is based on the maximum transmission duty cycle for the device, including relay functions. Necessary installation requirements to maintain compliance for each meter are specified in the Grant. Irrespective of duty cycle, based on the practical separation distance and the need for orderly communications among several devices, even multiple units or "banks" of meters in the same location will be compliant with the public exposure limits. These conditions for compliance are required to be met before a Grant can be issued from the EA program and auditing and review of Grants is a routine function of the FCC laboratory.

With respect to interference to medical devices, which you also raise in your letter, Smart Meters typically operate under Part 15 of the FCC Rules. Those rules specify power limitations to avoid interference. The Smart Meter wireless technologies used today are not significantly different from Wi-Fi devices, cell phones and other typical consumer products. Certain medical devices may need specific precautions in many other environments; these are generally considered during FDA approval of the individual medical device.

I hope that this information will be helpful. In addition, some technical information on the subject has been developed by the Electric Power Research Institute (EPRI) and we have enclosed that information for reference.

Please know that the FCC is continually monitoring the issue of RF exposure and related health and safety concerns, both in the general terms of the continuing propriety of its regulations, and in individual cases where substantive concerns are raised.

Sincerely,



Julius P. Knapp  
Chief

Office of Engineering and Technology