

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA



**FILED**  
11-15-10  
04:59 PM

Application of EMF Safety Network for  
Modification of D.06-07-027 and  
D.09-03-026.

Application 10-04-018  
(Filed April 6, 2010)

**COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES  
ON THE PROPOSED DECISION GRANTING  
PACIFIC GAS & ELECTRIC COMPANY'S  
MOTION TO DISMISS APPLICATION**

**I. INTRODUCTION AND SUMMARY**

Pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure, the Division of Ratepayer Advocates (DRA) submits these comments on the Proposed Decision issued by Administrative Law Judge Sullivan on October 26, 2010.

EMF Safety Network (Network) filed an application requesting that the Commission examine the health and safety impacts of radio frequency (RF) emissions from Pacific Gas and Electric Company's (PG&E) SmartMeter system. PG&E moved to dismiss the application on the ground that "the field of RF regulation is preempted by federal law."<sup>1</sup>

The Proposed Decision (PD) grants PG&E's Motion to Dismiss. Upon what grounds is unclear. The PD does not squarely address PG&E's preemption argument. Rather, it appears to grant the motion based on three factual findings about RF emissions from SmartMeters. To the extent the PD grants the Motion to Dismiss based on PG&E's federal preemption argument, it commits legal error. To the extent it dismisses Network's application on the basis of the PD's factual findings, it also errs. Those

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<sup>1</sup> Pacific Gas and Electric Company's Motion for Immediate Dismissal of Application 0-04-018 (filed May 17, 2010) (hereafter "Motion to Dismiss").

findings (which are supported by a very limited record) are not sufficient to support the implicit conclusion that RF emissions from the SmartMeter system are within safe limits. DRA reiterates a recommendation it has made recently in response to other petitions (or applications) seeking some type of relief concerning PG&E’s SmartMeter deployment: that the Commission respond to these petitions by conducting an open, public proceeding to address public concerns about RF emissions. To be clear, in making this recommendation DRA expresses no opinion on the health impacts of AMI RF emissions.

## II. DISCUSSION

### A. **Federal preemption principles do not preclude the Commission from conducting an open, public inquiry into RF emissions from SmartMeters.**

The PD summarizes the contentions of PG&E and Network regarding federal preemption and then goes on to state that it is “reasonable to grant PG&E’s Motion to Dismiss concerning all matters relating to RF transmission by SmartMeters.”<sup>2</sup> The PD does not contain any analysis or conclusions on the preemption issue; it merely states that “the Commission generally does not delve into technical matters which fall within the purview of another agency, in this case, the FCC[Federal Communications Commission].”<sup>3</sup>

Nevertheless, by granting PG&E’s motion to dismiss the PD implicitly accepts PG&E’s contentions. DRA believes dismissal on the federal preemption grounds presented by PG&E constitutes legal error.

The FCC indisputably has regulatory authority to set RF emissions standards pursuant to certain provisions of the Federal Communications Act (47 USC §151 et seq.) (FCA), primarily § 332 (“Mobile Services”). PG&E relies on § 332 (c)(7)(B)(iv), which provides:

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<sup>2</sup> PD, p. 9.

<sup>3</sup> Id.

No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions.”<sup>4</sup>

DRA agrees that parties who believe the FCC’s RF emissions standards generally are inadequate must seek relief from the FCC. However, the preemptive effect of the provision cited above is not as broad as PG&E argues. No party contends that this

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<sup>4</sup> 47 U.S.C. § 332 (c)(7) provides:

**(7) Preservation of local zoning authority.**

(A) General authority. Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities.

(B) Limitations.

(i) The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof--

(I) shall not unreasonably discriminate among providers of functionally equivalent services; and

(II) shall not prohibit or have the effect of prohibiting the provision of personal wireless services.

(ii) A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request.

(iii) Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

(iv) No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions.

(v) Any person adversely affected by any final action or failure to act by a State or local government or any instrumentality thereof that is inconsistent with this subparagraph may, within 30 days after such action or failure to act, commence an action in any court of competent jurisdiction. The court shall hear and decide such action on an expedited basis. Any person adversely affected by an act or failure to act by a State or local government or any instrumentality thereof that is inconsistent with clause (iv) may petition the Commission for relief.

(C) Definitions. For purposes of this paragraph--

(i) the term "personal wireless services" means commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services;

(ii) the term "personal wireless service facilities" means facilities for the provision of personal wireless services; and

(iii) the term "unlicensed wireless service" means the offering of telecommunications services using duly authorized devices which do not require individual licenses, but does not mean the provision of direct-to-home satellite services (as defined in section 303(v) [47 USCS § 303(v)]).

provision of the FCA precludes the Commission from directing the investor-owned utilities it regulates *to deploy AMI*, as it has done. If this provision of the FCA does not preclude the Commission from ordering AMI deployment, surely it does not preclude the Commission from ensuring that the deployment it has authorized is accomplished without jeopardizing public health and safety.

The FCC’s authority to regulate RF emissions does not deprive this Commission of its authority under state law to ensure that the in-state utility infrastructure does not jeopardize public health and welfare.<sup>5</sup> As the appellate courts have consistently recognized and recently reiterated, this Commission’s authority in this area is very broad. See, e.g., *SDG&E v. Covalt* (1996), 13 Cal. 4th 893; *PG&E Corp. v. CPUC* (2004) 118 Cal. App. 4th 1174, 1198 (Section 701 of the Public Utilities Code “allows the PUC to ‘do all things ... necessary and convenient’ in the exercise of its authority over public utilities whether or not ‘specifically designated’ in the Public Utilities Code. Where the authority sought is ‘cognate and germane’ to utility regulation, the PUC’s authority under section 701 has been liberally construed [citations omitted].”).

Nothing in the Federal Communications Act (FCA) precludes this Commission from exercising its broad powers to protect public health and safety by investigating RF emissions exposure from the AMI systems currently being installed — if only to reassure the public that the emissions are not harmful, if that is the case. Such a public inquiry is particularly appropriate here because AMI is being deployed by the California IOUs at the Commission’s behest.<sup>6</sup>

The FCA does not displace state regulation completely in all areas in which the FCC is given regulatory authority. See *Air Transport Assn. v. CPUC* (9<sup>th</sup> Cir. 1987) 833 F.2d 200, 204 (“The Communications Act establishes, by its terms, a dual system of state and federal regulation over telephone service.”); *California v. Federal Communications*

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<sup>5</sup> See DRA’s October 20, 2010 Response to Application for Modification filed by CARE in A.10-09-012, discussing the Commission’s responsibility to protect public health and welfare, citing Public Utilities Code sections 451, 761, 762, and 768.

<sup>6</sup> See *Order Instituting Rulemaking on policies and practices for advanced metering, demand response, and dynamic pricing* (R. 02-06-001) and decisions issued in that proceeding.

*Commission* (9<sup>th</sup> Cir. 1986)798 F.2d 1515 (FCC authority to regulate radio transmission does not displace state authority to regulate intrastate radio common carriage service). Section 332, like other provisions of the FCA, contains provisions preserving state and local authority in certain areas. For example, although Section 332 bars states from regulating wireless telephone rates and market entry, it preserves state authority to regulate “other terms and conditions of service.” See *Telesaurus v. Power* (9<sup>th</sup> Cir 2010) 2010 U.S. App. Lexis 20851 (discussing extent of Section 332 preemption). As the Commission is well aware, it therefore has the authority to enact consumer protection measures applicable to wireless telephone service, even though it can not regulate rates. It should also be noted that Section 302a of the FCA, which gives the FCC authority to make regulations concerning radio interference, expressly does not apply to devices and systems used by a public utility providing electric service.<sup>7</sup>

The PD notes (without comment) PG&E’s assertion that the Commission has “already concluded that it does not have jurisdiction over RF electromagnetic fields” in Decision 06-04-070 (concerning Broadband Over Powerlines deployment).<sup>8</sup> If the PD is relying on this argument, that reliance is misplaced. Article 3.5 of the California

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<sup>7</sup> Section 302a provides in relevant part:

**§ 302a. Devices which interfere with radio reception**

(a) Regulations. The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications; and (2) establishing minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from radio frequency energy. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, or shipment of such devices and home electronic equipment and systems, and to the use of such devices.

(b) Restrictions. No person shall manufacture, import, sell, offer for sale, or ship devices or home electronic equipment and systems, or use devices, which fail to comply with regulations promulgated pursuant to this section.

(c) **Exceptions. The provisions of this section shall not be applicable to . . . the manufacture, assembly, or installation of devices or home electronic equipment and systems for its own use by a public utility engaged in providing electric service . . .** (emphasis added).

<sup>8</sup> PD, p. 8.

Constitution precludes the Commission from refusing to enforce a statute it is charged with enforcing because the Commission thinks the statute is preempted by federal law, unless an appellate court has held that the statute is preempted. Cal. Const. Art. 3.5; see *Burlington Northern Railway Co. v. CPUC* (2003) 112 Cal. App.4<sup>th</sup> 881, 888. PG&E has not cited, and DRA is not aware of, any appellate court decision holding that 47 USC § 332 c)(7)(B)(iv) (or any other provision of the FCA) precludes the Commission from investigating RF emissions produced by in-state utility infrastructure. Indeed, the Commission has in the past investigated electromagnetic emissions from transmission lines, and the California Supreme Court has recognized its authority to do so.<sup>2</sup>

For these reasons, the FCC's authority to regulate RF emissions does not preclude the Commission from measuring and reporting on the level of RF emissions from AMI.

**B. The record in this proceeding does not provide a comprehensive quantification of RF emissions from PG&E's AMI system**

The PD appears to grant the Motion to Dismiss based on the following findings of fact:

2. All radio devices in PG&E's Smart Meters are licensed or certified by the FCC and comply with all FCC requirements.
3. Smart Meters produce RF emissions far below health standards adopted

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<sup>2</sup> See *Order Instituting Rulemaking to update the Commission's policies and procedures related to electromagnetic fields emanating from regulated utility facilities* (R.04-08-020). In discussing its authority to conduct this investigation, the Commission observed:

“The courts have acknowledged the Commission's jurisdiction in reviewing EMF-related matters. For example, the California Supreme Court issued a decision in *SDG&E v. Covalt*, 13 Cal 4th 893 (1996), ruling that by issuing D.93-11-013 and establishing interim EMF policies the Commission has claimed exclusive jurisdiction over issues related to EMF exposure while its investigation into the health effects of EMFs continued. The Supreme Court held that, “the Commission has broad authority to determine whether the service or equipment of any public utility poses any danger to the; health or safety of the public, and if so, to prescribe corrective measures and order them into effect.” (13 Cal 4th 893, 923 (1996)). Additionally, the Court has interpreted the Commission's authority to require every public utility to construct, maintain and operate its facilities and equipment in a manner that safeguards the health and safety of its employees, customers, and the public, including the Commission's duty to regulate EMFs. (13 Cal 4th 893, 923 (1996)).”

by the FCC.

4. Smart Meters produce RF emissions far below the levels of many commonly used devices.

The only record evidence to support these findings is found in a declaration by Daniel M. Partridge on behalf of PG&E.<sup>10</sup> The declaration contains broad assertions about the level of RF exposure attributable to PG&E SmartMeters:

“Exposure to radio frequency energy from SmartMeters™ is considerably less than the exposure from other radio devices in widespread use.”<sup>11</sup>

“There are many other wireless devices in commonplace use in addition to the radio devices listed above. These devices often involve more frequent radio transmission, emit radio frequency energy for longer periods of time and operate in much closer proximity to humans, than the PG&E SmartMeter™ devices.”<sup>12</sup>

These assertions are apparently based on certain unstated assumptions about the circumstances of exposure:

“SmartMeter™ emissions will result in exposures that are very small compared to existing exposure regulations. For the electric SmartMeter™, the RF fields at 10 feet or beyond will be less than 0.1 microwatts per square centimeter.”<sup>13</sup>

When he expressly addresses circumstances that could impact exposure, Mr. Partridge states:

“The SmartMeter™ radio is typically located on the outside of buildings at some distance and blocked by walls from

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<sup>10</sup> Declaration of Daniel M. Partridge in support of Pacific Gas and Electric Company’s Motion for Immediate Dismissal of Application 10-04-018 (hereafter “Partridge Declaration”).

<sup>11</sup> Partridge Declaration, p.2.

<sup>12</sup> Id. at p.3.

<sup>13</sup> Id. at p. 4.

human inhabitants. Also it transmits for a very short duration.”<sup>14</sup>

The declaration does not address to what extent these conditions apply to PG&E customer dwellings and places of work.

These statements constitute the whole of the evidence regarding RF emissions in the record of this proceeding. The declaration references critical information which is not in the record and has not been tested in this proceeding.<sup>15</sup>

As DRA noted in comments filed on October 20, 2010 in Application 10-09-012, determination of a causal relationship between SmartMeters and customer health requires a three-step process analogous to establishing air quality impacts. Calculating source emission levels is only the first step.<sup>16</sup> The declaration offered by PG&E implies there is only a single source of RF emissions from PG&E’s AMI system, but does not clearly define the source or state the RF power output of this undefined source. In actuality, the AMI system has multiple sources, including the mesh radio on the customer’s electric meter, the mesh radios on the neighboring electric meters, RF radios on local gas meter modules, home area network (HAN) radios, and signals from the communication network equipment for both gas and electric meters, such as data collector units (DCUs) and repeater stations such as PG&E’s proposed “SUNDS” system.<sup>17</sup> It is possible that the power of these RF radios vary depending on the location and type of meter installed, and the local configuration of the RF networks required to ensure regular communication

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<sup>14</sup> Id, at p.2.

<sup>15</sup> EMF correctly rebutted that RF signals are not “blocked by walls” (EMF Response dated May 27, pp.3-4). PG&E clarified that “the magnitude of the signals entering the home will be very substantially diminished because the wall has the effect of attenuating the radio signal.” (PG&E Response dated June 11, 2010, p.4.)

<sup>16</sup> These steps are to calculate source emission levels, model exposure or emissions concentrations at specific locations adjacent to the source; and compare modeled exposure to relevant standards. See page 6.

<sup>17</sup> PG&E is developing a Subterranean Urban Network Deployment System (SUNDS) system to address the “unique challenges in RF communication” in dense urban areas such as San Francisco’s financial district. See slides 26-30 of PG&E’s November 2, 2010 presentation to their Technical Advisory Committee (TAC).



with the meters.<sup>18</sup> In providing a single example of RF emissions, PG&E is not providing a complete catalog of the AMI-driven RF sources that impact its customers. An accurate assessment of the RF emissions from the AMI system should begin by quantifying the RF emission power and directionality of all AMI system components which could impact customers.

Another key element of RF emissions mentioned in Mr. Partridge's declaration is the transmission path, including both the distance between the source and receiver and the materials between them. Mr. Partridge posits an RF emission level 10 feet from the source without commenting on whether this distance is typical for SmartMeter installations, and what materials may be within this 10-foot path. Many customers have meters installed in a garage where they might spend a significant amount of time, or on a wall that bounds a high-use living space such as a bedroom or family room.

Finally, the time element must be considered. PG&E has indicated that the meter radio "transmits for a very short duration", but doesn't quantify the duty cycle of any of the RF radios, the variations that can be expected, or how transmissions from multiple radios might compound exposure.

It seems likely based on the factors discussed above that RF exposure could vary significantly among the millions of customer installation sites, and customer locations within those sites. Typical RF exposure levels that impact the majority of PG&E customers will be an important data point when evaluating the health impacts of PG&E's AMI system and the data provided by PG&E suggests that typical exposure will be low. However, outlier situations with higher than average RF exposure, such as a bedroom bounded by a wall that holds all meters for an apartment complex, must also be considered.

DRA has made recommendations on the type of data that should be compiled by the Commission as well as a process for vetting this data, in comments responding to an

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<sup>18</sup> For example, the record does not indicate if all residential meters have the same RF power output, nor if this power output differs from small or large commercial customers.

application to modify the PG&E AMI decision filed by CARE.<sup>19</sup> DRA incorporates by reference and reiterates those recommendations, and further recommends that the Commission gather adequate data (and allow that data to be reviewed in a public proceeding) before reaching conclusions on the RF emissions from PG&E's AMI system. DRA is not presuming that there are health effects caused by RF emissions from PG&E's AMI system. It reminds the Commission that it has a constitutionally mandated requirement to investigate the possibility of health effects and make sound conclusions based in solid evidence.

**C. The record in this proceeding does not address whether RF emissions from PG&E's AMI system should be evaluated as an incremental increase to existing RF emissions**

In response to Network's application, PG&E states that AMI RF emissions are much smaller than other RF emission sources in our environment, and also that by themselves, they are much lower than FCC standards.<sup>20</sup> These statements do not address the question of whether the impacts of AMI RF emissions should be considered *in addition to* those from other sources — whether AMI RF emissions could be the proverbial “straw that broke the camel's back.” Conceptually, it is reasonable to assume that there may be cumulative impacts of RF exposure, particularly since FCC standards are based on thermal effects, and temperature increases from one heat source compound if another heat source is added to the system. Cumulative exposure is relevant when considering other environmental impacts such as air, water, and noise pollution. Even FCC regulations seem to indicate that cumulative impacts need to be considered. For example, the FCC states that “at multiple-transmitter sites, all significant contributions to the RF environment should be considered, not just those fields associated with one

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<sup>19</sup> Response of the Division of Ratepayer Advocates to Application of Californians for Renewable Energy, Inc. (CARE) to Modify Decision 06-06-027, filed October 20, 2010 in A.10-09-012.

<sup>20</sup> Declaration of Daniel M. Partridge, pp. 3-4.

specific source.”<sup>21</sup> In the situation where a new large transmitter that is not “categorically exempt” pushes RF exposure over the FCC limits, “it is the responsibility of the applicant to ensure compliance, since the existing site is already in compliance.”<sup>22</sup>

DRA recommends that the Commission consider whether background RF exposure is germane to the determination of safe AMI RF emissions.

**D. The PD errs in making broad findings about RF emissions from PG&E’s AMI system based on incomplete and insufficient evidence.**

The PD concludes that “[i]t is not reasonable” to consider “the alleged health impacts of RF emissions from Smart Meters at this time” and grants PG&E’s Motion To Dismiss. These conclusions appear to be based on the perception that Smart Meters will make “a relatively tiny contribution...to RF exposure relative to other source in our modern environment.”<sup>23</sup> The PD finds that “Smart Meters produce RF levels far below health standards adopted by the FCC” and “below the levels of many commonly used devices.”<sup>24</sup> But these findings are based solely on the information provided by PG&E in response to Network’s application, which provided only a single estimate of RF exposure without discussion of range of exposure levels that will be experienced by *all* of PG&E’s customers. In addition, the combined impact of the AMI system emissions *in addition to* other sources of RF emissions, as discussed in the preceding section, was not addressed by PG&E.<sup>25</sup> The record contains no information about whether new RF emissions from AMI should be considered in isolation, or in combination with emissions from existing RF sources. For these reasons, both the findings and the evidence on which they are based are insufficient to support the PD’s implicit, broad conclusion that the RF emissions from the AMI system are within safe limits.

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<sup>21</sup> “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, OET Bulletin 65, Edition 97-01, August 1997, p.33.

<sup>22</sup> Id. at p. 34.

<sup>23</sup> PD, p.9.; see also Findings of Fact 2-4.

<sup>24</sup> PD, Findings of Fact 3 and 4, p.11.

<sup>25</sup> PD, Finding of Fact 3, p.11.

**E. The potential benefits of AMI benefits may not be fully realized if some customers remain concerned about health impacts of Smart Meters.**

A further reason why the Commission should address public concerns about RF emissions is that public acceptance of AMI is critical to realizing the potential benefits of AMI. The Commission approved universal deployment throughout PG&E's territory based on forecasts of demand response (DR) and operational savings based on universal deployment.<sup>26</sup> If customers are allowed to opt out of the AMI program, the program costs would likely increase since more than one meter reading system would be required.<sup>27</sup> In addition, the DR benefits could decrease since customers without Smart Meters would not have the benefit of hourly usage feedback, or access to AMI enabled DR tariffs and program. Thus, if customers concerned about health or safety about RF emissions are allowed to opt out of the SmartMeter program, it is possible that PG&E's AMI deployment will not be cost-effective. Health and safety concerns of customers who have SmartMeters need to be addressed, so that they will be willing to make use of the enabling technology. Unless the public's concerns can be put to rest, there is a very great risk that PG&E's SmartMeter deployment will turn out to be a \$2.2 billion mistake that ratepayers can ill afford.

**III. CONCLUSION**

Notwithstanding the FCC's authority to set RF emissions standards, this Commission has ample authority (as well as a responsibility) under the Public Utilities Code to ensure that PG&E's AMI system poses no threat to public health or safety. The PD errs in reaching conclusions based on limited and incomplete evidence about the RF emissions from PG&E's AMI system. The record in this proceeding is not robust enough to support conclusions about the health impacts of Smart Meters. DRA recommends that the Commission delay consideration of this PD until additional evidence is compiled and

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<sup>26</sup> D.06-07-027, pp 29-30 (operational savings) pp. 47-48 (demand response benefits).

<sup>27</sup> This cost could be avoided if customers who opted out were required to pay for the cost of non-standard meter reading.

reviewed in a public process. If the Commission decides to defer all questions concerning RF emissions of the AMI system to the FCC, it should refrain from making findings about Smart Meter RF exposure levels that are not supported by complete and adequate data, as this PD does. DRA strongly recommends the first approach as a means of building public confidence in the statewide advanced metering network, and restoring confidence in the Commission as a defender of the public interest.

Respectfully submitted,

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November 15, 2010

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of **COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES ON THE PROPOSED DECISION GRANTING PACIFIC GAS & ELECTRIC COMPANY'S MOTION TO DISMISS APPLICATION** to the official service list in **A.10-04-018** by using the following service:

**E-Mail Service:** sending the entire document as an attachment to all known parties of record who provided electronic mail addresses.

**U.S. Mail Service:** mailing by first-class mail with postage prepaid to all known parties of record who did not provide electronic mail addresses.

Executed on **November 15, 2010** at San Francisco, California.

/s/ IMELDA EUSEBIO

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