Docket Nos. : A.11-04-006

: A.11-05-011

Exhibit Number : <u>DRA-1</u>
Commissioner : Florio

ALJ : Barnett

DRA Witness Logan



# DIVISION OF RATEPAYER ADVOCATES CALIFORNIA PUBLIC UTILITIES COMMISSION

# REPORT ON THE APPLICATIONS OF SOUTHERN CALIFORNIA EDISON COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY

**SONGS Seismic and Tsunami Studies** 

San Francisco, California September 30, 2011

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Appendix A

Certificate of Service

#### I. INTRODUCTION

- 2 This exhibit presents the analyses and recommendations of the Division of
- 3 Ratepayer Advocates (DRA) regarding Southern California Edison Company (SCE) and
- 4 San Diego Gas & Electric Company's (SDG&E) San Onofre Nuclear Generating Station
- 5 (SONGS) seismic and tsunami studies application (consolidated).
- 6 SCE and SDG&E request \$62.7 million for both ongoing seismic research, and
- 7 new seismic research projects, which includes specific analysis and project management
- 8 for SONGS.

- 9 DRA's recommendations are included in section II below, while DRA's
- 10 Discussion and Analysis are in section III below.

## II. SUMMARY OF RECOMMENDATIONS

- The following summarizes DRA's recommendations:
  - DRA recommends that the Commission approve the seismic and tsunami studies identified by the applicants. The study program should advance the assessment of potential safety hazards associated with SONGS. Despite inherent cost risk with this ambitious study program, as discussed below, DRA recommends that the Commission adopt the applicants' cost estimate of \$64 million (100% share).
  - The study program should yield valuable information to benefit of the citizens living and working, including the utility employees, in the SONGS area and broader Southern California, and the State of California. This is beneficial to SCE's and SDG&E's ratepayers. It is also beneficial to SCE's and SDG&E's *shareholders*. DRA recommends that the Commission recognize that the study program will provide significant benefits to the utilities' shareholders, both short-term and long-term.
  - DRA recommends that the Commission apply a cost-sharing mechanism to the program costs to recognize the mutual benefit of these important studies. DRA recommends a 90/10 percent cost-sharing split between ratepayers/shareholders.
- DRA recommends that the Commission cap the program costs at the \$62.7 million requested by the utilities. Additional funding should be requested with a new application. The proposed Tier III advice letter process should be rejected.

DRA recommends approval of the utilities balancing account ratemaking proposal, but modified to account for the 90 percent cost allocation to ratepayers.

### III. DISCUSSION/ANALYSIS

## A. Overview of SCE's Request

SCE's testimony requests \$50.1 million (SCE 78.21% share) for ongoing seismic research, new seismic research projects, SONGS specific analysis and project management. SDG&E's application requests recovery of its 20% share of seismic study costs, approximately \$12.6 million. SCE and SDG&E's applications were consolidated by an ALJ ruling on June 8, 2011. By order of the Commission, SCE moved the costs of its ongoing SONGS seismic program from SCE's Test Year 2012 General Rate Case (GRC) to this application. The rationale for the utilities' application is essentially to increase "the scientific

The rationale for the utilities' application is essentially to increase "the scientific understanding of the seismic and tsunami conditions" at SONGS, and to comply with the California Energy Commission's (CEC) recommendations resulting from its AB 1632 Report. These requests were originally in SCE's 2012 GRC. The issue was removed from the GRC and these applications were filed as a result of a successful motion by the Alliance for Nuclear Responsibility (A4NR) so the issue(s) can be litigated separately.<sup>4</sup>

According to SCE, the company completed a probabilistic seismic hazard analysis (PSHA) in 1995, concluding that "the overall seismic risk for SONGS 2 & 3 is low." SCE also states that follow-up PSHA reviews in 2001 and 2010 "confirm that the overall seismic risk for SONGS 2 & 3 remains low." However, SCE does admit that results

<sup>&</sup>lt;sup>1</sup> A.11-04-006, Exh. SCE-1, p. 2. SCE's testimony shows a 100% share estimate of \$64.0 million.

<sup>&</sup>lt;sup>2</sup> A.11-05-011, p. 10.

<sup>&</sup>lt;sup>3</sup> A.10-11-015, Exh. SCE-15, p. 1.

 $<sup>\</sup>frac{4}{9}$  Exh. SCE-1, pp. 1, 6 and 7.

<sup>&</sup>lt;sup>5</sup> Exh. SCE-1, p. 3.

<sup>6 &</sup>lt;u>Id</u>., p. 4.

from the prior assessments were not at the level that these new studies might show due to

2 the new technologies proposed in the instant proceeding.<sup>7</sup>

In 2011, SCE conducted a tsunami evaluation for SONGS, concluding that "there is no predicted potential tsunami impact to the SONGS site." SCE is also conducting a probabilistic tsunami hazard analysis (PTHA) which is not yet completed. <sup>9</sup>

SCE's testimony provides that the costs requested are for new as well as ongoing projects. For example, SCE has an on-going seismic program, referred to as the Seismic Hazard Analysis Program (SHAP). SCE's on-going seismic program is budgeted at \$4.4 million. SCE's testimony states that it may update the PSHA and

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SCE's testimony also describes a group of proposed seismic research projects. La SCE's request for seismic research projects totals \$53.6 million. The seismic research projects make up the bulk of SCE's total request, e.g., \$14.4 million for shallow mapping and \$21.7 million for deep mapping. SCE's testimony also states that shallow mapping "will take a little more than two years to complete," while deep mapping "with take about four years to complete." Regarding deep mapping, SCE's testimony raises a question about the difficulty of obtaining federal and state permits: "deep reflection surveys require a rigorous EIR (Environmental Impact Report) supported federal and state

environmental permits that may be extremely difficult to obtain and will likely involve a

<sup>&</sup>lt;sup>7</sup> SCE application, p.4.

Exh. SCE-1, p. 5. SCE assumes that the 30 foot SONGS seawall and the 28.2 foot North Industrial Area seawall are taller than the assumed "new maximum tsunami height" of "approximately 22.9 feet."

<sup>&</sup>lt;sup>9</sup> Exh. SCE-1, p. 6.

<sup>10</sup> Exh. SCE-1, pp. 8-24.

<sup>11</sup> Exh. SCE-1, pp. 8-10.

<sup>12</sup> Exh. SCE-1, p. 23, Table VIII-2.

<sup>13</sup> Exh. SCE-1, p. 10.

<sup>&</sup>lt;sup>14</sup> Exh. SCE-1, pp. 10-19.

<sup>15</sup> Exh. SCE-1, p. 23, Table VIII-2.

<sup>16</sup> Exh. SCE-1, pp. 14 and 16.

- 1 two-year process if permitting is feasible." SCE also proposes ground motion studies at
- 2 an estimated cost of \$2.7 million $\frac{18}{}$ , additional tsunami studies costing \$1.4 million $\frac{19}{}$ ,
- 3 SONGS specific analysis totaling  $$2.3 \text{ million}^{20}$ and project management costs of <math>$3.7$
- 4 million.<sup>21</sup> Table 1 provides a summary of the estimated SONGS Seismic Study costs.

**TABLE 1: SONGS Seismic Study Cost Summary** 

Category	100% Share <sup>22</sup>	SCE Share	SDG&E Share
On-Going Seismic Program	\$4.4 million	\$3.5 million	\$.9 million
Seismic Research Projects	\$53.6 million	\$41.9 million	\$10.7 million
SONGS Specific Analysis	\$2.2 million	\$1.8 million	\$.4 million
Project Management	\$3.7 million	\$2.9 million	\$.7 million
Total:	\$64 million	\$50.1 million	\$12.6 million <sup>23</sup>

## B. DRA Analysis

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DRA analysis and recommendations are based on review of the application and testimony, and data responses. Several factors drive the analysis. First, the uncertainty within of the scope and nature of the studies, as well as the costs increasing significantly from the GRC, subjects ratepayers to the entire risk of the studies. This is true despite the fact that both ratepayers and *shareholders* benefit from the studies. Second, any relevant directive, law, or regulation for conducting these studies is essentially absent. Finally, as with essentially all the procedural mechanisms for the Nuclear Proceedings before the

<sup>&</sup>lt;sup>17</sup> Exh. SCE-1, p. 15.

<sup>18</sup> Exh. SCE-1, pp. 17-19.

<sup>&</sup>lt;sup>19</sup> Exh. SCE-1, pp. 19-20. SCE's testimony is less than certain about the need for one tsunami study element: "[p]ossible drilling in estuary/lagoons north of San Diego to identify possible paleo-tsunami deposits." (Exh. SCE-1, p. 20).

<sup>&</sup>lt;sup>20</sup> Exh. SCE-1, pp. 20-21.

<sup>21</sup> Exh. SCE-1, p. 21-22.

<sup>&</sup>lt;sup>22</sup> SCE will bill the City of Riverside its 1.79% share of SONGS Seismic Study costs.

<sup>23</sup> Total does not add due to rounding.

- 1 Commission, there should be a general level of procedural consistency between Pacific
- 2 Gas and Electric's (PG&E) approved seismic studies, and any further rate requests should
- 3 be filed through a new application. DRA discusses these issues below.

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# 1. The Ongoing and Proposed Studies that Applicants Request to Fund

DRA sent data requests to SCE, and met with SCE staff twice. During meetings with SCE, it became clear that the level of deep mapping required would depend on the results from previously concluded shallow mapping.

SCE provided workpapers for its cost estimates.<sup>24</sup> The cost estimate workpapers included contingency levels that range from 5% to 30%; the contingency level for shallow mapping is 20% while the contingency level for deep mapping is 30%.

DRA asked for workpapers supporting SCE's statement that "[t]he 1995 PRA came to the conclusion that the overall seismic risk for SONGS 2 & 3 is low." SCE provided no workpapers, but made this response, in part:

The phrase, 'the seismic risk for SONG 2&3 is low' was intended to convey the conclusion of the assessment performed, which included beyond design basis events, and evaluated what is referred to as the 'core damage frequency'. This means the probability that the reactor fuel will be damaged by the effects of an earthquake, including a beyond design basis event, was acceptably small. 26

DRA also asked for workpapers supporting SCE's statement that "[s]ubsequent PSHA review in 2001 and 2010 confirm that the overall seismic risk for SONGS 2 & 3 remains low." DRA received no workpapers and a response similar to SCE's response to DRA data request 1, Q.2 above.

<sup>&</sup>lt;sup>24</sup> SCE response to DRA data request 1, Q.1.

<sup>25</sup> Exh. SCE-1, p. 3; SCE response to DRA data request 1, Q.2.

 $<sup>\</sup>frac{26}{2}$  SCE response to DRA data request 1, Q.2 (excerpt).

<sup>27</sup> Exh. SCE-1, p. 4; SCE response to DRA data request 1, Q.3.

DRA asked for and received additional information regarding the adequacy of the SONGS seawalls as a barrier to tsunamis. DRA also requested and received a copy of the "Tsunami Inundation Map for Emergency Planning" referred to in SCE's testimony. 29

The studies may or may not reveal any hazards, but DRA still accepts the project and costs for a remote possibility to identify any unsafe conditions. Ratepayers are being exposed to significant risk for these studies.

sce failed to provide a reasonable explanation for project costs to rise by \$20 million within a matter of months. Sce's testimony states that "[t]he funding that Sce requested in the 2012 GRC for seismic research projects are all included in the current application. However, the timing and scope for certain projects have been accelerated and/or increased as appropriate based upon the latest information available." DRA asked Sce to (1) provide workpapers identifying the projects that have been accelerated and/or increased and (2) to provide the original estimated cost of these projects, the increase amounts and resulting estimated project costs. In response, Sce stated that "[t]he reflective mapping timing was accelerated compared to the schedule in the 2012 GRC. There are no workpapers regarding projects that have been accelerated and/or increased." Sce also provided a table that shows the change in cost from the 2012 GRC application to this application. The \$5.7 million ongoing seismic program in the GRC estimate decreased to \$4.4 million in this application, while the total GRC estimate increased from \$43.4 million.

Cost containment is necessary due to the 1) uncertainty of the current cost estimate, 2) the potential for costs to rise significantly as it did after the issue was remove from the GRC, and 3) and the fact that there is no incentive for SCE to maintain cost

 $<sup>^{\</sup>underline{28}}$  SCE response to DRA data request 1, Q.s 4 and 6.

<sup>&</sup>lt;sup>29</sup> Exh. SCE-1, p. 5; SCE response to DRA data request 1, Q.5.

<sup>30</sup> Exh. SCE-1, p. 8.

 $<sup>\</sup>frac{31}{2}$  DRA data request 1, Q.13.

<sup>32</sup> SCE response to DRA data request 1, Q.13.

<sup>33</sup> SCE response to DRA data request 1, Q. 13.

1 controls. Therefore, shareholders should be responsible for 10% of the costs.

2 Furthermore, a cap should be placed on SCE's request, but SCE should be allowed to

3 return to ask for more money through a new application.

While DRA reiterates that it is not challenging the costs of the seismic study

5 program, the Commission should provide oversight through cost containment

mechanisms. DRA's recommendations all ensure proper cost oversight, without

7 impeding the study's ability to identify safety issues.

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## 2. Basis for the Particular Studies and Application

The risk borne by ratepayers become more important due to the fact that these studies have no mandate by law, regulation, or the body that is responsible for the safety of SONGS, the Nuclear Regulatory Commission (NRC). DRA was unable to obtain responses from SCE to provide any statutory basis for request. 34

DRA asked SCE whether the U.S. Nuclear Regulatory Commission (NRC) has required SCE to expand its existing seismic research program, SCE responded "[n]o. The NRC has not required SCE, nor has SCE made a commitment to the NRC, to conduct SCE's ongoing seismic program." DRA asked SCE whether the NRC has

17 required SCE to expand its existing tsunami research program, SCE responded "[n]o.

18 The NRC has not required SCE, nor has SCE made a commitment to the NRC, to

conduct ongoing tsunami research."36 DRA asked SCE whether the NRC has required

SCE to engage in additional SONGS specific analyses, SCE responded "[a]t this time, the

NRC has not required SCE to engage in additional SONGS specific analyses." 37

SCE's provides minimal support for the regulatory basis to justify the utilities' \$64 million request. SCE cites the California Energy Commission's (CEC) AB 1632

 $<sup>\</sup>frac{34}{9}$  SCE response to DRA data request 1, Q.8.

<sup>35</sup> SCE response to DRA data request 1, Q.15.

<sup>36</sup> SCE response to DRA data request 1, Q.12.

<sup>37</sup> SCE response, to DRA data request 1, Q.16.

<sup>38</sup> Exh. SCE-1, pp. 6-7.

- 1 Report, in which the CEC made recommendations that "SCE should develop an active
- 2 seismic hazards research program for SONGS" and also recommended seismic mapping.
- 3 The report stated that "[t]he Energy Commission recommends that SCE should use three-
- 4 dimensional seismic reflection mapping, other techniques, and a permanent GPS array for
- 5 resolving seismic uncertainties for SONGS." The CEC did not provide any funding or

6 cost estimates to go with these recommendations. As such, much of the program detail

7 was self-guided by the applicants.

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It is significant that the NRC, the body solely responsible and with the highest expertise for Nuclear Power Plants safety did not order these studies. As important is the fact that the basis for the request was a report, which did not provide a specific amount or specific instructions. To a certain extent the studies could arguably be voluntary.

At this point, whether voluntary or not, revealing potential safety hazards are important. Both ratepayers and shareholders benefit from enhanced safety measures that may result from the studies. Ratepayers will benefit by having health and safety protected. Shareholders' financial benefit is potentially in the billions by avoiding a catastrophe or successfully relicensing SONGS, thereby earning a return for at least two more decades. These benefits are not necessarily quantifiable at this time. But it is very reasonable that shareholders bear a mere 10% of the costs.

## 3. General Consistency to PG&E's Similar Request

DRA asked SCE to compare its \$64 million seismic study proposal with the \$16.7 million seismic program approved in D.10-08-003 for PG&E's Diablo Canyon nuclear power plant. SCE was able to provide some information based on a review of PG&E's application and other public information. There are certain similarities between SCE's and PG&E's seismic mapping projects.

Pursuant to Ordering Paragraph 8 of D.10-08-003, PG&E recently requested that the Commission re-open A.10-01-014 to approve revised cost estimates for the seismic

<sup>&</sup>lt;sup>39</sup> SCE response to DRA data request 2, Q.1.

<sup>40</sup> SCE response to DRA data request 2, Q.1.

studies approved on D.10-08-003.41 PG&E requests that the approved cost estimate of

2 \$16.7 million be increased to \$64.2 million, a \$47.5 million increase. 42 Based on the cost

detail provided with the Motion, 43 \$33.2 million of the increase is for Offshore 3-D

Studies, and \$11.4 million of the increase is for Onshore 2-D Studies.

DRA cannot speak to the reasonableness of PG&E's new request. However, DRA can point to the fact that its cost-cap recommendation is reasonable. If the Commission puts a cost cap on the instant request, SCE is not prevented from asking for additional

8 funding. Furthermore, DRA's recommendation that the applicants file a new application.

This would be consistent with prior policy and transparent to all parties.

#### C. Recommendations And Conclusion

DRA finds three primary issues with the SCE/SDG&E request for recovery of the costs for seismic studies associated with SONGS. These issues are (1) the level and uncertainty of the cost estimate (2) the uncertainty of the potential benefits, and (3) the lack of a regulatory or legal mandate to conduct the studies. Based on a review of SCE's testimony, DRA's discovery, a comparison to PG&E Seismic Study Program, and consideration of the regulatory context, DRA developed the following recommendations.

DRA recommends that SCE/SDG&E's request for seismic study funding should be capped at their requested amount, \$62.7 million, and that shareholders should pay ten percent (10%) of the estimated costs as a means to insure cost control. DRA notes that there is some uncertainty as to (1) the extent of the deep mapping that will be required for the proposed seismic studies and (2) the extent of drilling needed for part of the proposed tsunami studies, which may result in lower costs. The most recent comprehensive cost-benefit analysis for SONGS, undertaken as part of the Steam Generator Replacement

<sup>&</sup>lt;sup>41</sup> Motion of Pacific Gas and Electric Company To Re-open Application 10-01-014 And To Recover Increased Costs Of Seismic Studies, dated September 23, 2011.

<sup>42</sup> Id., p.1.

<sup>43</sup> Id., p.5.

estimated contingencies that range from 5% to 30%; making shareholders responsible for ten percent of the estimated costs of the seismic studies will focus SCE and SDG&E's attention on what is really necessary and may spur them to find cost savings. Previously SCE had concluded that "the overall seismic risk for SONGS 2 & 3 remains low," and that "there is no predicted potential tsunami impact to the SONGS site." Given these two conclusions, it is clear that the justification for additional funding for seismic and tsunami

Project (SGRP), did not include the added costs of SCE's seismic studies. 44 SCE

conclusions, it is clear that the justification for additional funding for seismic and tsunam

studies is not based on a regulatory or legal mandate. The NRC, which regulates nuclear safety, has not required the utilities to conduct either the proposed seismic or tsunami

10 studies. The CEC recommended additional seismic studies but did not mandate them.

And the state legislature did not provide nor mandate that the Commission authorize additional ratepayer funding for the studies.

The disparity in funding level between PG&E's Diablo Canyon \$16.7 million seismic study program, approved by the Commission in D.10-08-003, and the SCE/SDG&E \$64 million SONGS seismic/tsunami program can be partially explained by differences in PG&E's existing Long-Term Seismic Program (LTSP) versus SCE's SHAP. Now that PG&E has revised its cost estimate to virtually the same level as SCE/SDG&E, there is major concern that SCE's estimates are uncertain and could go higher without some form of control. A recent data response from SCE asserts that the \$64 million cost estimate is "considered conceptual". DRA does not oppose the seismic/tsunami activities, but is concerned that given the uncertainty of the current cost estimates, actual costs may above and beyond current estimates, with little or no cost controls or protection for ratepayers. A cost sharing mechanism will provide an incentive for SCE to control costs, implement the study program efficiently, and make wise choices

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for this non-mandated activity.

<sup>&</sup>lt;sup>44</sup> A.04-02-026.

<sup>45</sup> SCE response to A4NR data request 3, Q.1.

SCE proposes balancing account treatment (Base Revenue Requirement Balancing Account-BRRBA) for recovery of the expenses associated with the proposed seismic/tsunami studies. SCE also proposes "to file Tier III advice letters and obtain CPUC authorization to record in the BRRBA any additional O&M costs which are in excess of \$50.1 million," with review in a future Energy Resource Recovery Account (ERRA) proceeding. DRA recommends approval of the utilities' balancing account ratemaking proposal, but DRA opposes the use of a Tier III advice letter to recover additional O&M costs in excess of \$50.1 million. Due to the uncertainty the cost estimate, and the potential for significant cost overruns, use of an advice letter to recover O&M costs in excess of \$50.1 million is inappropriate. ERRA proceedings are not the appropriate venue for reviewing the reasonableness of significant cost overruns. SCE should file a new application should it seek additional funding in excess of \$50.1 million share. Similarly, SDG&E should also file a new application to seek funds above its \$12.6 million share.

SCE has not yet sought to relicense the SONGS at the NRC. The results from the seismic study program will likely assist SCE in its relicensing effort because of the valuable information obtained from the studies should feed into that effort. Conversely, if the studies indicate higher seismic risks than previously considered, leading SCE to *not seek* relicensing, then the study efforts will have proven beneficial, because the seismic studies helped avoid costly relicensing activities. Whatever the results of the studies are, SCE, SDG&E, and their shareholders will benefit. Commensurate with those benefits, shareholders should bear a reasonable portion to the costs, however, DRA requests that the shareholders bear only 10%. Based on the current cost estimate, DRA's proposal would only impose about \$5 million of cost sharing on SCE's shareholders, and about

<sup>46</sup> Exh. SCE-1, p. 24. SDG&E proposes a SONGS Seismic Research Balancing Account and a separate Memorandum Account to record and recover its share of expenses. SDG&E A.11-05-001, p. 10.

<sup>47</sup> Exh. SCE-1, p. 25.

- 1 \$1.2 million on SDG&E's shareholders. Based on DRA's assessment, this proposal
- 2 strikes a reasonable balance between ratepayers, shareholders and the public interest.

# **APPENDIX A**

1		Qualifications and Prepared Testimony
2		Of
3		Scott Logan
4	Q.1	Please state your name and address.
5	A.1	My name is Scott Logan. My business address is 505 Van Ness Avenue, San
6		Francisco, California.
7	Q.2	By whom are you employed and in what capacity?
8	A.2	I am employed by the California Public Utilities Commission as a Public Utilities
9		Regulatory Analyst V in the Division of Ratepayer Advocates Energy Cost of
0		Service and Natural Gas Branch.
1	Q.3	Briefly describe your educational background and work experience.
12	A.3	I received a B.A. in Economics from San Francisco State University in 1985. I
13		joined the Division of Ratepayer Advocates of the California Public Utilities
4		Commission in 1986. I have worked on electricity and energy matters since that
15		time, including electric generation O&M expenses and capital expenditures,
16		energy efficiency, resource planning, long-term procurement and planning
17		(LTPP), transmission planning and Certificate of Public Convenience and
18		Necessity (CPNC) proceedings. I have testified in numerous Commission
9		proceedings.
20	Q.4.	What is your area of responsibility in this proceeding?
21	A.4.	I am responsible for Exhibit DRA-1, which addresses SCE/SDG&E's SONGS
22		seismic and tsunami studies costs.
23	Q.5	Does that complete your prepared testimony?
24	A.5	Yes, it does.

## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of "REPORT ON THE				
CONSOLIDATED TESTIMONY OF SOUTHERN CALIFORNIA EDISON				
COMPANY AND SAN DIEGO GAS & ELECTRIC COMPANY" to the				
official service list in <b>A.11-04-006</b> , <b>A.11-05-011</b> by using the following service:				
[X] E-Mail Service: sending the entire document as an attachment to all				
known parties of record who provided electronic mail addresses.				
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all known parties of record who did not provide electronic mail addresses.				
Executed on September 30, 2011 at San Francisco, California.				
/s/ REBECCA ROJO				
REBECCA ROJO				

## SERVICE LIST A.11-04-006; A.11-05-011

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