COMMISSIONERS PRESENT
Arthur H. Rosenfeld, Presiding Member
Jackalyne Pfannenstiel, Associate Member

ADVISORS PRESENT
Ivin Rhyne
Tim Tutt

STAFF PRESENT
Betty Chrisman
Gary Flamm
Melinda Merritt
G. William "Bill" Pennington
Ken Rider
Harinder Singh
Bill Staack
Peter Strait

OTHER PRESENTERS
Gary Fernstrom, Pacific Gas and Electric Company (PG&E)
Dr. Paul Bendt, Ecos Consulting
Leo Rainer, Davis Energy Group
Steve Nadel, American Council for an Energy Efficient Economy (ACEEE) (via telephone)
Amanda Stevens, Energy Solutions
Ted Pope, Energy Solutions
ALSO PRESENT

Dain M. Hansen, National Electronics Manufacturers Association (NEMA)

Andre Algazi, State of California, Department of Toxic Substance Control

Larry Albert, Black & Decker, representing Power Tool Institute (via telephone)

Jean Baronas, Sony Electronics, Inc. (via telephone)

Wayne E. Morris, Association of Home Appliance Manufacturers (via telephone)

Celia Hugueley, Oasis Pool Service and Independent Pool and Spa Service Association (IPSSA)

Bob Nichols, Independent Pool and Spa Service Association (IPSSA)

Mike Gardner, Mike Gardner Pools and Independent Pool and Spa Service Association (IPSSA)

Cheryl English, Acuity Brands Lighting and National Electronics Manufacturers Association (NEMA)

John Green, Cooper Lighting and National Electronics Manufacturers Association (NEMA)

Clark Linstone, Lamps Plus representing American Lighting Association (ALA)
## INDEX

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceedings</td>
<td>1</td>
</tr>
<tr>
<td>Opening Remarks</td>
<td>3</td>
</tr>
<tr>
<td>General Purpose Lighting</td>
<td>8</td>
</tr>
<tr>
<td>Public Comment</td>
<td>14</td>
</tr>
<tr>
<td>Draft Environmental Impact Report for Lighting Efficiency Standards</td>
<td></td>
</tr>
<tr>
<td>CEC Staff</td>
<td>22</td>
</tr>
<tr>
<td>Public Comment</td>
<td>26</td>
</tr>
<tr>
<td>Updates and Revisions Necessary for Consistency with Federal Laws and Other Non-substantive Changes</td>
<td>34</td>
</tr>
<tr>
<td>Battery Charger Systems Test Procedure</td>
<td></td>
</tr>
<tr>
<td>CEC Staff</td>
<td>37</td>
</tr>
<tr>
<td>Public Comment</td>
<td>42</td>
</tr>
<tr>
<td>PG&amp;E/Ecos Consulting/SCE</td>
<td>46</td>
</tr>
<tr>
<td>Public Comment</td>
<td>55</td>
</tr>
<tr>
<td>Residential Pool Pumps and Portable Electric Spas</td>
<td></td>
</tr>
<tr>
<td>CEC Staff</td>
<td>70</td>
</tr>
<tr>
<td>PG&amp;E/Davis Energy Group</td>
<td>74</td>
</tr>
<tr>
<td>IPSSA</td>
<td>105</td>
</tr>
<tr>
<td>Afternoon Session</td>
<td>138</td>
</tr>
<tr>
<td>Metal Halide Luminaires</td>
<td></td>
</tr>
<tr>
<td>CEC Staff</td>
<td>138</td>
</tr>
<tr>
<td>PG&amp;E/Energy Solutions/ACEEE</td>
<td>143</td>
</tr>
<tr>
<td>NEMA</td>
<td>151</td>
</tr>
<tr>
<td>GU-24 Sockets, Luminaires and Adapters</td>
<td>178</td>
</tr>
<tr>
<td>Portable Lighting Fixtures</td>
<td></td>
</tr>
<tr>
<td>CEC Staff</td>
<td>184</td>
</tr>
<tr>
<td>PG&amp;E/Energy Solutions</td>
<td>189</td>
</tr>
<tr>
<td>ALA</td>
<td>194</td>
</tr>
<tr>
<td>NEMA</td>
<td>--</td>
</tr>
</tbody>
</table>

PETERS SHORTHAND REPORTING CORPORATION  (916) 362-2345
INDEX

<table>
<thead>
<tr>
<th>Public Comment - All Topics</th>
<th>199</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Steps</td>
<td>200</td>
</tr>
<tr>
<td>Adjournment</td>
<td>202</td>
</tr>
<tr>
<td>Reporter's Certificate</td>
<td>203</td>
</tr>
</tbody>
</table>
PROCEEDINGS

9:00 a.m.

PRESIDING MEMBER ROSENFELD: Good morning. Welcome to the 2008 Title 24 Rulemaking Phase I.

I am Art Rosenfeld. Chairman Pfannenstiel, who is to my left, and I have done a little trading of committee assignments recently. So you have the same team you are used to except this time I am chairing and Commissioner Pfannenstiel is number two. But we will both be very interested in what is going on today.

This is Phase I. Sometime later on this year we hope to get to Phase II, which has to do with TVs, and eventually Phase III, which is other things not even scheduled.

I think with that I will again look at Chairman Pfannenstiel and say welcome and ask you if you have anything to say.

ASSOCIATE MEMBER PFANNENSTIEL: Just welcome. We have a full day ahead of us with an agenda covering several subjects. So I think we will hand it over to staff.

PRESIDING MEMBER ROSENFELD: Well no, I need to make one other introduction. My faithful

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345
advisor, John Wilson, has gone on to work for the Energy Foundation and is replaced with David Hungerford, who can't be here today. My second advisor, Ivin Rhyne is on my right. I'm sure Tim Tutt will be here. That's Chairman Pfannenstiel's advisor, whom you all know well.

Okay, now it's to staff. Melinda, are you going to run us through this?

MS. MERRITT: Yes.

PRESIDING MEMBER ROSENFELD: Melinda Merritt.

MS. MERRITT: I will start things off.

Good morning, everyone. I am Melinda Merritt with the Energy Commission's Appliance Efficiency Program and the project manager for the 2008 appliance efficiency rulemaking.

First, as usual, I need to go over some building logistics and safety information so bear with me. For those of you not familiar with the building, the closest restrooms are located out the doors of the hearing room to the left. There is a snack bar on the second floor under the white awning.

(Whereupon, Advisor Tutt joined the Commissioners at the dais.)
Lastly, in the event of an emergency and the building is evacuated please follow our employees to the appropriate exits. We will reconvene at Roosevelt Park, which is located diagonally across the street from this building. Please proceed calmly and quickly. Again, following the employees with whom you are meeting to exit the building.

Today's public meeting is the Efficiency Committee's Public Hearing regarding proposed amendments to the appliance efficiency regulations related to lighting efficiency, battery charger systems test procedures, residential pool pumps and substantial updates, clarifications and revisions to the appliance efficiency regulations to be current with federal laws.

Today's meeting is also the Committee's public meeting to take comments on the Draft Environmental Impact Report for Lighting Efficiency Standards related to Part A.

We ask that any member of the public wishing to speak fill out one of these blue cards so that we can advise our Presiding Member as to who needs to speak when.

There are copies of the meeting agenda.
and Committee Notices and a limited number of
copies of the staff reports, other rulemaking
documents and presentations available in the
foyer. In particular there is a Notice of
Proposed Action for both Part A and Part B of the
Rulemaking and the Notice of Completion for the
Draft Environmental Impact Report.

All comments received to date have been
posted on our website and we will be posting the
slide packs used in today's presentations along
with any additional comments received following
today's workshop.

This workshop is being recorded and the
transcript will be posted within two weeks.

This meeting is also being broadcast
over the Internet. Interested public wishing to
participate by phone may call in to the following
number, 1-888-469-2078. The passcode is
Regulations, the call leader is Melinda Merritt.

So in its April Scoping Order and
Workshop Notice the Committee Established the
scope of Phase I of this proceeding, which is
currently divided into three parts. This hearing
today is considering possible amendments related
to Parts A and B of this proceeding.
The topics that are being considered under Part A include general purpose lighting. These are standards for general service lamps. And also portable lighting fixtures, portable luminaires are topics under Part A.

Part B topics include metal halide fixtures or luminaires, a proposed test procedure for battery charger systems, revisions to the current standards regarding residential pool pumps and portable electric spas. And again, necessary updates and revisions for consistency with recent federal laws and other non-substantive changes.

Just quickly. The most recent events and the remaining schedule for Phase I. The rulemaking documents were published by the Office of Administrative Law at the end of last month.

Advisor Tutt: Excuse me, Melinda.

Ms. Merritt: Yes.

Advisor Tutt: Can you dim the lights a little bit so it will be easier to see over there.

Thank you.

Presiding Member Rosenfeld: Much better.

Ms. Merritt: Okay. The 45-day public comment period with respect to the rulemaking
documents, the 45-day language, ends on October 13. And comments will be accepted up to October 22, which is the scheduled date for possible adoption by the Energy Commission at the October 22 Business meeting.

Modifications to the 45-day language may be required; and modified text will be made available at least 15 days prior to the noticed Energy Commission adoption. This is 15-day language. And the earliest possible adoption date for 15-day language is December 3, 2008 Business meeting.

With respect to the Draft Environmental Impact Report for Lighting Efficiency Standards, the DEIR. The documents were filed with the State Clearinghouse on August 14.

There's a 45-day comment period ending October 6.

All public comments will be addressed in the final Environmental Impact Report.

And possible adoption of that document would be, at the earliest, the October 22, 2008 Business Meeting.

Lastly, there are a number of documents that are now out in the public. There were two
staff reports that were filed in late August that
relate to Part A and Part B of the Phase I
rulemaking. The staff reports provide the staff's
assessment of feasibility, cost-effectiveness,
energy use and projected savings on a statewide
basis. It summarizes stakeholder proposals,
comments that were received and alternatives that
were considered. And it summarizes the proposed
regulations for all topics.

The regulatory documents, the Notice of
Proposed Action, the Initial Statement of Reasons,
the Express Terms, et cetera, they contain both
changes with regulatory effect and changes without
regulatory effect.

The changes with regulatory effect, the
Express Terms, can be found in the 45-day language
for Parts A and B.

The non-substantive changes, those
without regulatory effect, are found in the 45-day
language for Part B. That was the receptacle for
all of the revisions and clarifications.

With that we will start through the
agenda. The first topic is general purpose
lighting and Harinder Singh from the program staff
will summarize the regulations.
MR. SINGH: Good morning, everybody. My name is Harinder Singh. I am staff with the Appliance Efficiency Program, Building and Appliance Office. I am presenting proposed regulations for general service lamps.

General service lamps, incandescent lamps, use a significant amount of energy on a statewide basis. The proposed regulations provide an opportunity to reduce statewide residential lighting energy use.

The proposed regulations are as follows:
Adoption of general service lamp definitions as stated in EISA. And adoption of standards described in EISA for general service incandescent lamps for Tier I, one year prior to federal effective dates.

Additionally, adopt a backstop requirement for general service lamps stated in EISA as Tier II standard, two years prior to federal effective dates.

Furthermore, incandescent lamps shall not contain GU-24 base. This corresponds with the proposed requirement for portable lighting fixtures. This topic will be covered in more detail in the afternoon. GU-24 is consistent with

Proposed regulations for state-regulated, general service incandescent lamps for Tier I are shown in Table K-8 and for Tier II are shown in Table K-9. These tables provide details related to the lumen ranges, rated wattage, rated lamp life and proposed effective dates.

The proposed regulations are supported by Ecos Consulting and PG&E's analysis and recommendations.

These regulations are intended to help meet the AB 1109 requirements for statewide lighting energy reduction by 2018.

Proposed regulations are consistent with the federal appliance law that allows California to adopt the Tier I and Tier II lighting standards for general service lamps prior to the federal effective dates.

Additionally the proposed regulations meet the provisions of the Public Resources Code.

Staff analysis and PG&E's assessment concluded that early adoption of EISA standards will contribute to achieving significant reduction in residential lighting energy consumption as
required by AB 1109 by 2018.

This will result in approximately 28 percent decrease in general service incandescent lamp wattage from 2007 levels.

Adoption of proposed Tier II standards will result in an additional 27 percent decrease in general service lamp wattages.

Moreover, California will realize substantial energy savings after all existing medium screw base general service incandescent lamps are replaced with energy efficient Tier II lamps.

The Ecos and PG&E identified California has approximately 437 million, medium, screw-base sockets in use. The current residential annual statewide energy use by general service incandescent lamps is 17,893 million kilowatt hours.

The PG&E case study provided an estimated incremental cost of improvement per unit due to the proposed standard is $1 for Tier I lamps and $2 for Tier II lamps. Furthermore, the study provides an estimated reduced cost over the design life for the Tier I as $2.27 and for Tier II the reduced cost is $3.22. The proposed standard is
cost-effective.

Modified spectrum. PG&E accounts for the modified spectrum. The PG&E study accounts for the modified spectrum general service lamps for base case in their study. Modified spectrum general service incandescent lamps are less efficacious than the standard general service incandescent lamps and have lower lumens per watt.

For Tier I EISA lighting efficiency standards include a table for modified spectrum general service incandescent lamps along with a table for standard general service incandescent lamps. The lumen bins modified spectrum general service incandescent lamps provided in EISA use 28 percent less power than the current modified spectrum general service incandescent lamps available in the market.

Both PG&E and Energy Commission staff assessments, that is energy use and cost savings, include modified spectrum lamps as a segment or a subset of general service incandescent lamps.

Modified spectrum general service incandescent lamps are included in the scope and definition of Tier II.

The estimated average life cycle benefit
per unit is fairly close to both types of lamps. The estimated design life and incremental cost assumed for both types of lamps are the same. Due to the staff oversight the EISA table for modified spectrum general service incandescent lamps for Tier I was not included in the proposed regulation Express Terms. Staff proposes to correct this oversight in 15-day language with the inclusion of the EISA table and appropriate definitions in Express Terms for Part A as a standard for state-regulated modified spectrum general service incandescent lamps, Tier I, with one year accelerated effective dates in California. The table for modified spectrum is given below.

Modified spectrum lamps are included in Part B Express Terms as a federally-regulated lamp consistent with the EISA specifications and effective dates. And this concludes my presentation. Thank you.

PRESIDING MEMBER ROSENFELD: Thank you, Harinder. Is there comments and discussion? Does staff have something to say first?

MS. MERRITT: Well at this point we have, we will open it up for public comment or
comments by particularly interested parties. I think that the National Electrical Manufacturers Association --

PRESIDING MEMBER ROSENFIELD: Melinda, I can't hear you.

MS. MERRITT: Um --

PRESIDING MEMBER ROSENFIELD: That's better.

MS. MERRITT: Okay, sorry. At this point we will entertain any questions to the staff's presentation and open this up for comments from interested parties. I understand we have Dain from the National Electrical Manufacturers Association who would like to make some comments.

PRESIDING MEMBER ROSENFIELD: And Dain, hold on one second. In making introductions I realized I forgot to introduce the staff at the table here. That's Bill Pennington, Betty Chrisman and Bill Staack. Thank you for being here. Dain, go ahead. And tell us who you are.

MR. HANSEN: My name is Dain Hansen, I am with the National Electrical Manufacturers Association, also known as NEMA. We represent about, NEMA has a membership of approximately 450 electrical manufacturers in the capturing,
transmission, distribution and end use of
electrical components.

In this rulemaking we are going to have
comments throughout the period but my comments
today are pertaining to the Tier II standards
under this rulemaking.

We want to first of all say thank you to
all the staff and the Commissioners. It has been
good to work with you. We have been going back
and forth through this year and been able to have
good dialogue and discussions with everyone
involved. And I think it is making this
rulemaking go along much smoother. So we
appreciate that.

NEMA recognizes that California is
proposing to adopt standards at 45 lumens per watt
for incandescent lamps in 2018. NEMA's position
is that the ability for California to adopt the
standard will be dependant upon the federal
activity. As the CEC correctly points out in
their staff report, there is federal language in
EISA, or the Energy Independence and Security Act
of 2007, that places around California their
ability to adopt incandescent regulations in 2018.

And under this federal law they give
California three rules to work around. They say California can adopt a final rule adopted by the federal government two years early in 2018. Number two, they can adopt the backstop standard of 45 lumens per watt if there is no federal rule in place. And number three, continue with standards already in place before EISA.

The rules being proposed would only be applicable under option two, which makes this a conditional option. The condition that being no federal rule is in place. If a federal rule is in place California's only option, assuming option three would not be pursued, is to adopt the federal rule two years early. Therefore, in 2018 a proposal should be spelled out as a conditional adoption pending the outcome of any federal activity. Whether California states that explicitly or not does not change the conditional affect of this new, of this adoption.

Again, NEMA recommends that consideration of our original language stating that California intends to adopt a future rule two years early. A future federal rule two years early. If a federal rule does not happen, California will still have plenty of time.
approximately ten years from now to adopt a 
backstop standard as allowed. Thank you.

PRESIDING MEMBER ROSENFELD: Thank you.

That seems to be what I understood is going on 
anyway. I am not quite sure. Can I ask staff, 
maybe Bill Staack. Is the word -- This word 
conditional. It's implied anyway? I'm not sure 
if I understand what the controversy is, Bill.

MR. STAACK: Underneath the federal law, 
42 USC Section 6295(i)6(A). And then it's V-I is 
where the state preemption language is that we are 
discussing right now. And what we are proposing 
actually under our authority is to -- It could 
either be underneath this backstop or Part III, 
where we are allowed to adopt anything that we 
want if DOE does not adopt. And that's where we 
are coming up with the 45 watts per lumen. But 
the bottom line is --

PRESIDING MEMBER ROSENFELD: Lumens per 
watt.

MR. STAACK: Yes, I'm sorry. But the 
bottom line is whatever we adopt, the effective 
date isn't until January 1, 2018. There is no 
preemption issue unless we have adopted something 
wrong, which won't occur until 2018. By then we
have all these years to make a correction if necessary. But I believe staff believes that the 45 is cost-effective and feasible for us to adopt that now. And there is no federal preemption issue until the federal law comes into play, which is 2018, January 1.

Actually you could say it is conditional. But it could be changed or not changed. We won't know that until the specific date and find out if DOE actually adopts something or not. Does that answer?

PRESIDING MEMBER ROSENFELD: I've got to say I really don't see any big difference between Dain Hansen and what you said. I'm happy with either one.

MR. STAACK: Well what we are doing is we are putting language in that actually is conditional.

PRESIDING MEMBER ROSENFELD: Yeah.

MR. STAACK: Because it could be federally preempted, but we don't know that. So we are allowed to adopt standards that are cost effective and feasible. But the effective date is where the federal preemption come in. And we won't know that until 2018, whether there's an
issue or not. And we have plenty of time, if we
need to, to adjust. You know, if DOE actually
does adopt a standard then our standard actually
is moot because it is federally preempted.

PRESIDING MEMBER ROSENFELD: Okay.

MR. PENNINGTON: Just a little bit more
clarity. The Commission is not preempted from
adopting things. We are preempted from putting
into effect standards that we adopt --

PRESIDING MEMBER ROSENFELD: Right.

MR. PENNINGTON: -- if there is a
preemption issue. So there is no preemption that
would stop the Energy Commission from adopting a
standard today for what it anticipates will be the
level that we will to have in effect in 2018.

If DOE acts down the line as they are
directed then we could adjust that. We could
refine that, presumably. If they act reasonably
it would be similar to what we are adopting today.

PRESIDING MEMBER ROSENFELD: And we are
sitting, drawing a line in the sand. Okay, I
think I am clear on that. And Dain, you will
leave your comments in writing, right?

MR. HANSEN: Yes.

ASSOCIATE MEMBER PFANNENSTIEL: Art?
PRESIDING MEMBER ROSENFELD: Yes.

ASSOCIATE MEMBER PFANNENSTIEL: Just a question to NEMA. Dain, would the industry be -- Isn't it better for the industry to know this much in advance what California's intention is? It seems like setting this road map for ourselves, for the state, ten years out is a good, is a good thing. And yes, DOE may act a certain way and we end up being preempted from enforcing this. But having it out there seems like it's a valuable piece of information for the industry to know, this is where California intends to be.

MR. HANSEN: I specifically can't say if we agree with that or not because I have to talk with the members. But I think I can definitely talk about that. But I think the biggest concern is just to make sure that it's, as has been stated, it's conditional. And just so we know that it would be such.

ASSOCIATE MEMBER PFANNENSTIEL: Right, we understand that.

PRESIDING MEMBER ROSENFELD: We understand that.

ASSOCIATE MEMBER PFANNENSTIEL: That's a legal issue. But from a technical issue is really
what I'm saying. Our technical analysis says that
45 lumens per watt by 2018 is technically feasible
and cost-effective. So that is, I think as
Commissioner Rosenfeld just said, our line in the
sand. And it seems like that's a valuable piece
of information.

MR. HANSEN: I appreciate it, thank you.

MR. PENNINGTON: Could I make one more
comment?

PRESIDING MEMBER ROSENFELD: Please,
Bill. Bill Pennington.

MR. PENNINGTON: Short. I'm sorry for
taking time. We are directed by AB 1109 to adopt
standards this year that would save a huge amount
of energy. And so this adoption at this point in
time of the 45 lumens per watt is meeting a
commitment relative to 1109 that results in huge
amounts of energy. And if we fail to do that then
it is unclear whether we are meeting our
commitments under 1109. Or less clear, I should
say. So that's another reason.

PRESIDING MEMBER ROSENFELD: Bill, this
famous Huffington Bill, 1109. Which is I think
for a reduction to 50 percent by a certain date
and I have forgotten what that date is.

PRESIDING MEMBER ROSENFELD: By coincidence it's 2018. So Dain, you see a little bit of what is driving us. That tells us to adopt, by golly, and we are going to do that.

Thanks, Bill.

ADVISOR TUTT: Commissioner.

PRESIDING MEMBER ROSENFELD: Tim.

ADVISOR TUTT: I would also like to point out that the federal standard has a backstop requirement, as we know, that says that the eventual federal rule should -- it has to be at least 45 lumens per watt or more stricter. So in the case that DOE does adopt something that is greater than 45 lumens per watt.

MS. CHRISMAN: Stricter.

PRESIDING MEMBER ROSENFELD: That is stricter. If they eventually do that, as they are allowed, I see no reason why we would not adjust to reflect that.

PRESIDING MEMBER ROSENFELD: Happily.

ADVISOR TUTT: Happily.

PRESIDING MEMBER ROSENFELD: Okay.

Other comments? Melinda, back to you.

MS. MERRITT: Okay. At this point in
the agenda we are at the Public Meeting to take
comments on the Draft Environmental Impact Report
for the lighting efficiency standards considered
in Part A.

Peter Strait from our program staff will
be giving a brief overview of the Draft EIR and
then we will open it up for public comment.

MR. STRAIT: Thank you, Melinda. First
of all I would like to welcome everyone to this
hearing. Part of the purpose of this public
hearing is to provide an opportunity for the
public to comment on the content of the Draft
Environmental Impact Report, or DEIR, prepared by
the California Energy Commission staff.

This DEIR addresses the current status,
potential impacts and available mitigation path to
follow if California adopted energy efficiency
standards for general service lamps and portable
lighting fixtures, specifically as it relates to
compact fluorescent lamps, or CFLs.

Note that the DEIR does not address any
of the actions in Rulemaking Part B. Those
actions are not known to have any potentially
significant impacts and are covered by a separate
Negative Declaration.
The authority to adopt these regulations stems from the following: Federal law preempts state and local agencies from adopting their own appliance efficiency regulations for any appliance regulated by the Department of Energy, absent a specific exemption.

In December of 2007 Congress approved the Federal Energy Independence and Security Act of 2007, also known as the EISA, which set minimal, efficiency requirements for general service lamps. EISA gave California and other states the authority to adopt regulations that may be implemented one year prior to the proposed federal effective date.

In addition to California's granted authority, Assembly Bill 1109, as mentioned, expressly requires the Energy Commission to adopt lighting efficiency standards by December of 2008.

The Energy Commission proposes to adopt amendments to the appliance efficiency regulation to accelerate the effective dates of the federal Tier I and Tier II lighting efficiency standards as provided in the EISA by one year and two years, respectively.

Once the federal lighting standards
become effective at the national level, California's lighting standards will be superseded and will no longer be responsible for any potential impacts.

The Energy Commission is also proposing to adopt efficiency standards for portable lighting fixtures that increase the energy efficiency of these fixtures.

As this proposed adoption is an activity undertaken by a public agency with the potential to result in direct or indirect physical changes in the environment it constitutes a project under the California Environmental Quality Act, or CEQA. CECA requires public agencies to identify and consider the potential environmental effects of their projects. And when feasible, to mitigate any related adverse environmental consequences.

Acceleration of the federal lighting standards and increasing the efficiency of portable lighting fixtures is expected to contribute to significant energy savings within the state of California, partly through the increased use of compact fluorescent lamps and fluorescent lamp tubes.

Fluorescent lamps of both kinds contain
small amounts of mercury. The California Department of Toxic Substance Control, or DTSC, is mandated to regulate hazardous waste and to develop means of keeping such material out of the non-hazardous, solid waste stream. In a prior rulemaking DTSC defined fluorescent lamps, including both CFLs and fluorescent tubes, as an M003 listed universal waste. Because DTSC found that any release of mercury or mercury compounds presents a human health and environmental risk.

All M003 listed universal waste must be managed according to the universal waste regulations and sent to a qualified recycler to ensure that the mercury is kept out of the environment. It cannot be disposed of in municipal landfills.

The DEIR contends that all potentially significant impacts would be reduced to less-than-significant levels by implementing the universal waste regulations.

However, the full management of CFLs and fluorescent tubes has not materialized and most of this waste is currently improperly managed. Therefore the DEIR is formulated under the assumption that the proposed lighting standards
will result in a potentially significant impact regarding mercury disposal until the universal waste regulations are implemented and enforced. Such implementation and enforcement is under the authority and responsibility of the DTSC.

With that we invite anyone with comments to please make them at this time. To allow sufficient time and to be concise, the staff will not respond to any technical questions at this time. Once staff has had the opportunity to review and develop a precise answer to all questions a written response will be made available to all interested parties within the Final Environmental Impact Report.

The 45-day public comment period ends on October 6, 2008. The Energy Commission may consider adoption of the EIR as early as the October 22, 2008 Business Meeting.

At this time if anyone has any comments they would like to make related to the Draft Environmental Impact Report I invite you to do so.

ASSOCIATE MEMBER PFANNENSTIEL: Peter, is anybody here from DTSC? Could you come up.

MR. ALGAZI: Hi, I'm Andre Algazi, I'm with the Department of Toxic Substances Control,
formerly the Hazardous Waste Management Program,
now part of the Office of Pollution Prevention and
Green Technology.

PRESIDING MEMBER ROSENFIELD: Could you
just spell your name for us. We are all very
interested in you.


That's my last name. Andre is spelled --

ASSOCIATE MEMBER PFANNENSTIEL: Thank
you. Since clearly this whole question of
unmitigated impact depends on the ability to
process the mercury, or dispose of the mercury,
could you just give us a sense of what's happening
in that regard. I know that we have talked to
DTSC over the past couple of years on a program
that would, in fact, require some disposal or
recycling of used CFLs. What is happening with
that?

MR. ALGAZI: Several years ago we
adopted the regulation referred to in the
presentation, prior to which some fluorescent
lighting was classified as hazardous waste and
some wasn't. So we in 2003 adopted this listing
which basically said a lamp with intentionally
added mercury was hazardous waste to be managed
under this kind of simpler scheme called the
Universal Waste Rule and could not be disposed.

In the intervening four or five years we
had hoped that a collection infrastructure would
develop. We have already got -- We were assured
at the time that we did the regulation in 2003 by
the lighting recycling industry that they had the
capacity to properly recycle all of the
fluorescent lighting waste generated in California
at that time.

And so the problem seemed to be more of
a collection and transportation infrastructure
shortfall, especially with regard to residential
lighting waste. So in the intervening time we got
a little sidetracked with electronic waste. The
infrastructure for collecting lamps did not kind
of spring up spontaneously.

When AB 1109 went into place we were --
so another provision of this bill that is
mandating the regulations that this Draft EIR
covers told DTSC to convene a task force of
various parties. Mr. Tutt is part of that.

So we have had ongoing meetings and we
have a report to the Legislature, which is at the
Governor's Office. It was actually due to the
Legislature on the 1st of September but it hasn't yet gone. But that report recommends some steps to increase the infrastructure for convenient collection and recycling of lamps. So currently from households, based on data submitted by local household hazardous waste collection programs, we have estimated maybe ten percent collection rate. Which is actually significantly better than household hazardous waste in general but not too good.

ASSOCIATE MEMBER PFANNENSTIEL: So what is the solution here? I mean, we are sort of trapped in trying to find a disposal or some program that's going to work in California.

MR. ALGAZI: Well the solution is --

ASSOCIATE MEMBER PFANNENSTIEL: Is it money? Is it organization?

MR. ALGAZI: Yes.

ASSOCIATE MEMBER PFANNENSTIEL: Both of those?

MR. ALGAZI: Yes. So the problem is convenience and cost. One convenient option would be, for example, collection at retail. Which some retailers have already stepped up and offered to do. Most recently Home Depot and some local Ace
Hardwares, IKEA.

ASSOCIATE MEMBER PFANNENSTIEL: So are they doing it?

MR. ALGAZI: Yes.

ASSOCIATE MEMBER PFANNENSTIEL: They are actually -- So if I take my burned out CFLs --

MR. ALGAZI: You can go to any IKEA or any Home Depot and they'll take them. CFLs, not linear lamps.

ASSOCIATE MEMBER PFANNENSTIEL: Right, got that.

MR. ALGAZI: So that's likely to be part of a solution for convenient collection. The second issue is funding. Because it is actually not a commodity with a positive value. A spent lamp actually is sort of a liability. It costs money to properly recycle it. Even though they do reclaim various components from it and reuse them for something, the cost of capturing the mercury and what not.

ASSOCIATE MEMBER PFANNENSTIEL: Is there a proposal to perhaps put a fee on the price of every CFL such as to create a fund to do this?

MR. ALGAZI: Well that has been discussed. One of the sort of premises of the
discussion of the task force that we convened was that we did not want to dissuade people from using energy efficient lighting so a variety of things have been talked about. One of which is what you mentioned. Another is some other funding mechanisms. A potentially invisible fee or something coming from the manufacturers and/or some energy efficiency funds from ratepayers, things like that.

ASSOCIATE MEMBER PFANNENSTIEL: So what I’m hearing is this is a long ways from being resolved unless, perhaps, there is legislation introduced next session.

MR. ALGAZI: Well the outcome of this report will likely be legislation. So the report is basically making recommendations to the Legislature on how to address this issue. So I would expect something to happen.

ASSOCIATE MEMBER PFANNENSTIEL: Finally.

Thank you.

PRESIDING MEMBER ROSENFELD: Thank you very much.

MR. ALGAZI: Thank you.

PRESIDING MEMBER ROSENFELD: Actually I have one question, Andre. One question occurred
to me. I'm sorry, I'm asleep at the switch here.
Can you say a word or so, or maybe Tim, about how
this problem has been solved in other countries.
In Europe, for example. Will practically any
retailer take back a CFL? What hopes do you have
for Wal-Mart or whatever to step up to the plate?

MR. ALGAZI: Well they have a variety of
systems in the European Union for collecting lamps
from consumers. Lamps are covered under the WEED
directive, which is the Waste Electrical and
Electronic Equipment Directive in the European
Union. And it's kind of country-by-country
implementation, it is not consistently done. But
they have had some success in some countries in
Europe.

We had some speakers from Europe at a
recent workshop hosted by the Integrated Waste
Management Board on extended producer
responsibility, which is the concept that the
producer of the product should have responsibility
ultimately at the end of life for the disposition
of their product. And what we heard was that in
some cases they have been quite successful in the
European Union.

We are having, we are doing things a
little bit more piecemeal. We are just attacking
lamps rather than that directive which was very
broad in scope. I wouldn't -- It's hard to say,
because it is different from country to country,
that we would have something like any particular
country in the European Union.

But there have been also some cases in
localities. The state of Minnesota has had a
pretty good program for fluorescent lamp recycling
for maybe 10 years or 15 years. Some of the
European countries for a number of years. And
there are some local programs that have been
successful. Madison, Wisconsin, I guess.

I don't think our solution will look
exactly like any of those but we are hopeful that
we will find something that works for, you know,
the people of California for it to be convenient.
And also for all the stakeholders who are involved
in the discussions.

PRESIDING MEMBER ROSENFELD: Thank you.

MR. ALGAZI: Thank you.

MS. MERRITT: Are there any additional
comments from any member of the public on the
Draft Environmental Impact Report?

I don't see any so we can conclude that
segment of this hearing and move on to the next
topic on the agenda which is Updates and Revisions
Necessary for Consistency with Federal Laws and
Other Non-Substantive Changes. Betty Chrisman
from the program staff will be providing an
overview. Betty.

MS. CHRISMAN: Thank you, Melinda. For
the record, I am Betty Chrisman with the
California Energy Commission's Appliance
Efficiency Program.

Non-substantive changes are shown in the
Part B proposed regulations with text that is
either struck out or underlined. These reflect
changes without regulatory effect found in 10 Code
of Federal Regulations, CFR, Sections 430 and 431,
federal standards for consumer products and
commercial and industrial equipment; 16 CFR
Section 305, the Federal Trade Commission's
marking requirements; the Energy Independence and
Security Act of 2007; and other clarifications.

Non-substantive changes are generally
changes that do not materially alter any
requirement, right, responsibility, condition,
prescription or other regulatory element of any
California Code of Regulations provision. Such
changes may include, but are not limited to:
renumbering, reordering, or relocating a
regulatory provision; revising structure, syntax,
cross-reference, grammar or punctuation; making a
regulatory provision consistent with required
federal law; or deleting a regulatory provision
for which a federal law has been repealed.
Section 1605.1 of our regulations,
federal and state standards for federally
regulated appliances, includes updated or new
federal standards for appliances shown on this
slide and the next slide. I'll give you a couple
seconds to look at that one. This is the second
slide for updated or new federal standards.
Where appropriate, standards in Section
1605.3, state standards for non-federally
regulated appliances, have either been removed
where federal standards are already in effect; or
have an end-date incorporated, where federal
standards take effect in the future. In some
cases standards recently preempted are kept in the
document for reference and will be removed under
the next general rulemaking.
Both commercial pre-rinse spray valves
and pedestrian traffic signals maintain California

Staff welcomes stakeholders review and comments. And this concludes my presentation for this portion. Thank you.

PRESIDING MEMBER ROSENFELD: Thank you for an appropriately boring presentation.

(Laughter)

PRESIDING MEMBER ROSENFELD: I presume there is nobody eager to make comments about this.

MS. MERRITT: I guess I'll just underscore our invitation and request of parties to take a look at the very large amount of changes that --

PRESIDING MEMBER ROSENFELD: Melinda, can you talk into the mic.

MS. MERRITT: Okay, sorry. I just want to reiterate Betty's request that parties take a look at Part B and the really extensive revisions, updates, clarifications that we have made. And we'd welcome any input, corrections, editing that anyone might find. There was quite a bit done there.

The next topic on our agenda is a
proposed test procedure battery charger systems.
And we have Harinder Singh, Energy Commission
staff, to make a brief overview. After that we
will be handing this off to Pacific Gas and
Electric Company with Ecos Consulting for a
follow-on presentation. Harinder.

    MR. SINGH: Hello everybody. For the
record my name is Harinder Singh. I am presenting
the proposed adoption of battery charger test
method.

    A battery charger system is referred to
as a battery charger coupled with batteries.
California's appliance efficiency
regulations do not currently include test
procedures or efficiency standards for battery
charger systems.

    The US DOE, Department of Energy,
current test procedure for battery charger systems
measures energy consumption in inactive mode.

    DOE published a Notice of Proposed
Rulemaking on August 15, 2008, proposing
amendments to the existing test procedures for
battery chargers.

    DOE is required to determine by July 1,
2011 if energy conservation standards for battery
chargers are technically feasible and economically justifiable.

PG&E with Ecos Consulting submitted a proposed information template for battery charger systems on April 7, 2008, recommending that Energy Commission adopt a battery charger system test procedure developed by Ecos, EPRI, funded by the Energy Commission's PIER program and PG&E. PG&E's study identified that over 130 million battery charger systems are in use in California.

PG&E's initial proposal examined the use of battery charger systems in California, concluding that battery charger system efficiencies could be improved dramatically and would yield significant energy savings. In addition the proposal recommends that the Energy Commission request that manufacturers or other interested parties submit test data to help develop future battery charger standards.

Energy Commission staff conducted various meetings with battery charger trade associations, manufacturers, the Consumer Electronics Association and other industry representatives, with the DOE, Natural Resources Canada and electrical utilities. PG&E and the
staff received comments and suggestions from stakeholders and most of the comments have been incorporated into the test procedure.

Additionally Part B was added following a meeting with the large battery charger stakeholders and all stakeholders agreed to include testing of large battery charger systems into the Ecos test method. The stakeholder process resulted in Version 2.1.4 of this test method.

Staff addressed comments and concerns received from Consumer Electronics and Motorola during the pre-rulemaking process and the staff report. CEA, the Consumer Electronics Association, expressed concern regarding the overlap of the proposed battery charger systems test procedures in the state regulations and federal external power supply regulations.

Federal law states that an energy conservation standard for external power supplies shall not constitute an energy conservation standard for the separate end-use product to which the external power supply is connected.

It is clear from the federal law that the battery charger systems that are built into
separate end-use products are not considered
external power supplies. And testing them for
energy efficiency standards does not constitute
double testing. Moreover, there are no provisions
in the proposed test procedure to test the
external power supplies or internal power
supplies.

Staff believes that PG&E and Ecos
Consulting's test procedures is comprehensive,
measures energy consumption in active, maintenance
and standby mode. The test procedure is
applicable to a wide range of battery charger
system applications.

Staff recommends adoption of a voluntary
test procedure, the Energy Efficient Batter
Charger System Test Procedure, Version 2.1.4,
developed by Ecos, PG&E, Southern California
Edison and San Diego Gas and Electric as refined
through this rulemaking process.

Furthermore the staff recommends that
the Energy Commission's Efficiency Committee issue
a call for submittal of battery chargers test data
from manufacturers and interested parties.

Staff agrees with the PG&E proposal that
there receipt of additional test data will be
critical in analyzing how battery charger systems use energy, how energy use relates to the battery chemistry or capacity, and what role technologies and product types play in energy consumption.

Current and comprehensive test data will be helpful and is necessary in forming the basis to develop appropriate future efficiency standards for the battery charger systems.

A draft template for collection of data has been reviewed by stakeholders and is expected to be finalized soon. PG&E and Ecos will provide more information on schedules and the data collection process.

This concludes my presentation. As Peter mentioned, the audience, anybody is welcome to make any comments. Staff will not respond to technical questions, we will take comments. And we will respond to any technical questions received by us in writing. Thank you.

TELECONFERENCE OPERATOR: We do have a comment. We do have a comment from Larry Albert.

MS. MERRITT: Okay. Larry, are you on the line?

MR. ALBERT: Yes I am.

MS. MERRITT: All right, this is a good
moment then to make your comment.

MR. ALBERT: This is Larry Albert representing the Power Tool Institute. I just wanted to comment on the process that took place in the revisions of the test procedure. We believe that we had the opportunity to raise questions and comments and they were to a large extent addressed by the staff and incorporated into the test procedure.

Our feeling at this point is that for the most part the test procedure addresses some of the key measurements for active power, standby and maintenance. We believe that it probably represents at least a good starting point for comprehensive measurements of energy efficiency and battery chargers used for power tool applications.

Our position, I guess it hasn't been changed from earlier hearings, where we believe that the important consideration here is the adoption of a measurement that takes into account all three quantities in a balanced fashion that represents the actual energy during the use phase of the product. And we believe by having active, no energy, standby and maintenance mode energy
represented in the test procedure, by balancing these measurements in a comprehensive way it is possible to come up with a measurement for individual classes of battery chargers that would be reflective to a great extent of their actual energy consumed in use.

In addition I guess the only area in which we have perhaps still lingering disagreement with the test procedure is in the measurement of power factor. I understand the comment that we received earlier from PG&E and Ecos with respect to the rationale for measuring it.

We believe that it is probably not appropriate to include it in the test procedure in that it constitutes a new avenue of investigation that really doesn't relate back to the energy efficiency of the end product. In addition it opens the door to setting limits for a power factor that we believe would be inappropriate for addressing energy efficiency in battery chargers.

Again I would like to thank the staff for being extremely open and willing to make accommodation to stakeholder comment. I believe that the test procedure is a fairly good reflection of the acceptance process. Thank you.
PRESIDING MEMBER ROSENFIELD: Thank you, Larry. And now I see Fernstrom's hand up.

MR. FERNSTROM: Gary Fernstrom, Pacific Gas and Electric Company. Larry, before you conclude your comments, do you have thoughts on an alternative to the measurement of power factor that might provide an indication of the energy efficiency associated with that?

PRESIDING MEMBER ROSENFIELD: Is Larry still on the line? Gary, I think he is so happy he hung up.

MR. ALBERT: Yes.

PRESIDING MEMBER ROSENFIELD: Larry, are you back?

MR. ALBERT: Hello?

PRESIDING MEMBER ROSENFIELD: Gary Fernstrom has a question for you.

MR. FERNSTROM: Larry, perhaps you didn't hear my earlier question. This is Gary Fernstrom from PG&E. I was wondering if you and PTI had thoughts on an alternative way of measuring the energy efficiency associated with power factor in lieu of directly measuring the power factor?

MR. ALBERT: Yes. Gary, can you hear...
MR. FERNSTROM: Yes, we can hear you.

MR. ALBERT: Okay, sorry. If it's the Commission's intent that the scope of the test procedure and subsequent regulation is intended to measure power losses in the distribution system to the battery charger then it would seem to me that a better way of approaching that would be to measure the power consumption of the product through a test impedance that is reflective of the impedance of the source instead of the distribution system.

I think one of the problems with measuring power factor alone is that you have to measure it under some conditions of source impedance, which may or may not be reflective of the actual impedance that is causing the loss in the system. And by measuring it through a test impedance that folks believe is representative of what happens in, for example, residential situations, that intended application, then you would be able to essentially bundle the losses of those distribution system losses into the measurements of the battery charger itself.

This is all predicated upon the idea
that it would be appropriate to extend the
regulation and test procedure to include losses
that are not in the product itself but are losses
that are incurred in the distribution of power to
the product. Which, as I think we have discussed
in the past, is a little bit different than some
other test procedures we have looked at.

But that was the intent. That it seems
to me that it would be more appropriate to do it
that way. Then basically what you do is you get
one number out of that that represents the actual
energy consumed. And whether that energy is
consumed in the distribution wiring or if it is
consumed in the end-product, it really doesn't
matter, it is all bunched together.

MR. FERNSTROM: Thank you, Larry.

MR. ALBERT: You're welcome.

PRESIDING MEMBER ROSENFELD: Are there
any other comments on battery charger test
procedures?

MS. MERRITT: Art, I believe we have a
presentation by PG&E/Ecos Consulting, Dr. Paul
Bendt, as soon as we can call up his slide pack.

DR. BENDT: Okay. I am Dr. Paul Bendt
and I am here representing PG&E and Ecos
Consulting. We have been developing this test procedure over a period of more than five years. And our basic message is we are very happy with the process that has taken place and we encourage the Energy Commission to go forward with the staff recommendation to adopt this test procedure. So my comments today are going to be fairly short because we believe the technical issues have been resolved and a lot of the previous meetings, in the informal meetings the interested parties have had.

So again, you have heard a lot about active mode. That the test procedure that has been proposed for the Title 20 is the only one that tests the active charging mode of battery chargers that has received a large amount of testing. So the other test methods that are available are testing only the inactive modes and we believe that testing the active, charging mode is important.

This test procedure has been developed over five years with the involvement of many stakeholders. We believe we have largely reached consensus. I can address a little bit of the power factor issues that Larry brought up. I'll
do that after the prepared presentation. But I also want to note that this test procedure has been used by several different laboratories at Ecos, at some of the DOE contractors and so on, and has been found to -- that when handed a product the laboratory technician can actually follow the instructions and know how to proceed.

There have been a number of proposals put forward that were just idea without actually being tested in a laboratory. And to have the laboratories run through these test procedures through hundreds of products I think is very important for demonstrating that the test procedure is actually going to be useful in practice.

The active mode is a very important issue. This is an older slide. But the active mode is about half of the total energy used by battery chargers. It's the purple area on this graph. And it represents a large amount of the savings. So if we are not catching the active mode in our testing we miss the opportunity to see the energy use and we miss the savings that would be there. So we strongly encourage the Energy Commission to adopt this test procedure that does
test and examine the active mode energy use.

The latest revisions to the test procedure include a new Part 2 covering non-road electric vehicles.

And while this is fairly new to the public sphere, it has really been introduced to and through the Energy Commission since this May, but the actual test procedure has been developed over a period of about ten years by Southern California Edison and has been largely accepted by the manufacturers of batteries and battery chargers for the non-road electric vehicles. And so although this was fairly recently introduced there had already been a lot of history of development and a lot of acceptance of the test procedure by the interested parties.

So this I believe has been really a pretty non-contentious addition. And we are glad to see that because it does introduce the opportunity of testing a broader scope of products and then introduces perhaps the opportunity for additional energy savings in that broader scope of products.

We are looking and requesting that the Energy Commission attempt to gather additional
data from manufacturers and other parties. The
hundreds of products that have already been tested
by these procedures we do believe gives a fairly
good idea of what appropriate standards would look
like and what appropriate standard levels will be.

The call for data is largely just to
make sure that we haven't overlooked anything.
That there aren't any categories of products that
have performance that is significantly different
from what we have seen in the hundreds of tests.
So we believe that we can advise the Commission on
appropriate standards levels, even without
receiving more data. But we also believe that it
would make the standards more robust and more
certain that we are heading down the directions we
want if we are able to gather more data.

We are particularly interested in
getting more data on the non-road electric
vehicles. At this point the testing for that has
been done by Southern California Edison and by
PG&E. Both of those utilities have the labs with
the capabilities of doing these tests. We are
also interested in products with special
requirements.

One we have identified is emergency
lighting where the lights have to be illuminated continuously. And that requires a standby energy that may exceed what we would otherwise look at as standby energy in battery chargers.

We would like to know if there are other special products that have particularly safety obligations or safety regulations they must meet that we would like to be aware of to make sure that the standards are appropriate for those products.

As Harinder mentioned, we will provide a template. I believe there is a draft of that template already being discussed. We will make the details on that. We'd be looking at having that template and trying to collect data starting within the next week or so. And we would look to have data collected by November 6 so that it could be analyzed in order to make recommendations to the Energy Commission on standards levels early next year.

Just a quick mention of some of the activities at the Department of Energy, since that has been quite significant in how it make affect the California process. The Department of Energy at its meeting last Friday did declare that it
intends to include active mode in its test procedure and it is looking at October 2010, or earlier, as a date for publishing a test procedure that would include active mode. We would certainly encourage them to follow the lead of California and we hope that the test procedure that is being discussed here can also become the DOE test procedure.

Just as a general time line. We are looking at what we expect in the future. The top of this chart is actions by the CEC and the bottom is actions by the DOE. So you can see across the bottom that the DOE has, at this point, put forward minor changes to its test procedure to be consistent with EISA and has indicated its intent to include active mode in the future. That active mode would be included in 2010.

The main thing we want to address here is that as the CEC adopts the test procedure with the current process. We would then hope that the CEC can also put standards proposals forward in 2009, beginning by publishing and establishing proposed standards in the early part of the year so that they could be finalized by late 2009 and could be effective at a date that is approximately
the time that the DOE would be developing 
standards federally. This gives an opportunity 
for the actions of the state of California to have 
a significant effect on the federal process. 

I think that concludes the main 
presentation. We certainly thank the Energy 
Commission for its efforts over the past years and 
thank you for the opportunity today. We think the 
work that has been done has been very good and we 
would like to see this adopted as proposed in the 
45-day language. 

And I guess I will address very briefly 
the power factor questions raised by Larry Albert. 
I believe that power factor in fact is the correct 
measurement to make electronically. There are two 
reasons for including it in the test procedure. 
One is that if you do measure it you can then 
start to measure the losses in the distribution 
system and start coming up with energy estimates 
of the energy potential that can be saved there. 

If power factor is not measured then you 
are left with a total unknown. You have no idea 
of what the energy potential might be. So 
including it in the test procedure I believe is 
crucial because that starts providing us with the
information we need for going forward.

As far as including it in standards,
there are many ways that that power factor could
be included in the standards. And in fact it
could be included in a calculation which produces
what Larry Albert has asked for, that is, a
consolidated measurement of total energy consumed,
both by the product and by the distribution
system. One can come up with at least reasonable
estimates of that just by using the power factor
as measured.

So we believe that having the power
factor measured in the test procedure is the
appropriate way of going forward and it does leave
open a variety of possible standards that either
include or don't include the distribution, wiring
or include it in a variety of different ways. So
we believe having that measurement is important
and it provides the foundation for however that
might be incorporated in the proposed standards.

And with that I thank you and I guess I
again open this up for questions.

PRESIDING MEMBER ROSENFIELD: Questions
or comments?

MR. RIDER: We have some questions on
the phone.

PRESIDING MEMBER ROSENFELD: I'm sorry, did somebody say something?

MR. RIDER: Yes. There are some questions on the phone.

PRESIDING MEMBER ROSENFELD: On the phone?

MR. RIDER: Yes.

MR. MORRIS: Yes, hello?

DR. BENDT: Yes.

MR. MORRIS: This is Wayne Morris from AHAM.

DR. BENDT: Good morning, Wayne.

MR. MORRIS: Thank you Paul. And I thank the Commissioners and the staff for an excellent job and presentation, thank you.

Just a couple of quick comments. I would like to echo the comments that Larry Albert made and applaud the work of the staff. They have worked very hard to make sure that all of the stakeholders had an adequate opportunity to raise questions and concerns during the development of this test procedure. It has truly been a cooperative working activity and we thank them for all of their efforts in that.
Just to point out a couple of quick things. We agree with the comments that Larry Albert made in regard to both the development and the process. Also that the test procedure itself, we believe it is appropriate at this time to have a test procedure that measures both the active mode, the no battery mode and the maintenance mode.

And I think the graph that Dr. Bendt provided which showed nearly one-half the energy in this maintenance mode is a good example of why we had raised this issue back three years ago. And why we believe that measuring battery chargers under a external power supply test procedure which does not have any measurement of maintenance mode was inappropriate. Now this has been corrected and it is very appropriate for that situation.

I would also mentioned that at the Department of Energy hearing last week AHAM along with PTI strongly encouraged the US Department of Energy to modify its test procedure to include an active mode measurement. We call it an E-24 measurement. It is relatively simple to do under the DOE test procedure, to take that measurement. It really would not cause a major disruption to
the DOE's test procedure.

And we truly do not understand why it would take from now until October of 2010 for the Department to modify its test procedure. We urged the Department to do that this fall and have it done by the end of this calendar year so that there is one test procedure operating in the United States and not one for California and one for the rest of the nation. That does not seem to make too much sense to us.

We also urged them to consider the adoption of changes in the definitions section so as to bring those sections of the California Energy Commission test procedure into alignment with the Department of Energy test procedure under 10 CFR 430.

I would also mention that in the data call and in the template we would hope that in addition to the measurements and the information that it should be noted what type of battery charger the measurements are being made against. And particularly under the definitions that have been proposed for adoption in the CEC test procedure. So that battery chargers can be identified as to whether they are of the
detachable, integral or swappable type so that we can have a better understanding of that. Because as we begin to roll up that data that will help us in the setting of the standard situation.

Lastly I would just like to address in a very short amount the comments that, Dr. Bendt that you made in regards to power factor. I would say that we are in agreement with the comments that Larry Albert made.

I understand your comment about having it in the test procedure. We don't believe it is going to show for many of the smaller-type battery chargers that are used in appliances, in power tools, that this will result in a significant amount of energy savings.

We do understand that it would be added to the test procedures for the purposes of gathering energy. But we do believe that the way that this should be done is by doing it in accordance with the impedance that would be seen in the actual household environment and not in the manner that is being presented. We don't think that that would be a major change in situation.

And also to your point, Dr. Bendt, about adding the total amount of energy from both the
distribution as well as the product. That gets into the site source issue that we raised on a number of occasions. We don't believe that it is appropriate to tag the energy of the actual site against the product itself. So we think that that needs for some modification.

Other than that we agree with the test procedure as it is presented. We think that the modifications could be made at a later date to bring it into alignment on the power factor issue. I would, again, thank the staff for their very diligent work in both the process and also in cooperation with a number of changes and conditions to this test procedure, as evidenced by just the number of the test procedure alone. Thank you.

DR. BENDT: Yes, thank you, Wayne.

PRESIDING MEMBER ROSENFELD: I have a question for you, Paul. I have never made a power factor measurement in my life. Do I understand that the answer that you get for the power factor of a battery charger system depends slightly on the impedance of the line which is feeding the system?

DR. BENDT: Yes. It does depend
slightly on the line that is feeding it. And the
general procedure, and this has been used in the
IEC, for example, in their study of harmonics,
which is a closely related problem but is not
quite the same problem, that the general test
conditions are that it should be measured with a
low impedance source. Now that allows you to
measure -- a low impedance source with a very
clean sine wave is the ideal measurement. From
that one can then largely derive estimates of what
power would be lost if you had different
impedances of sources.

So the general procedure is in a
laboratory to test it with a low impedance. And
then even though you know in actual practice that
there is impedance upstream, it is the low
impedance test that is generally used in order to
determine the behavior of the product. Then one
can use that known behavior in order to determine
the upstream impacts.

PRESIDING MEMBER ROSENFIELD: And so our
friends on the phone are suggesting that the
impedance be more appropriate for a typical
residential circuit? Is that significantly
different from what you call a low impedance test?
DR. BENDT: Yes it is. There is enough impedance difference there. It doesn't make a big effect in the power factor but it essentially then becomes a question of are you putting the power factor measurement -- Let's see if I can wave my hands enough. One has your power source, one has the impedance of the line that connects it. And then one has the product.

And there essentially is a question of whether you are putting your power meter between the source and the line or whether you are putting your power meter between the line and the product. That then determines, in a sense, how you deal with the losses in the line itself. Are they just automatically included in your measurement or are you measuring something that is at the product that has a distorted wave form? In either case you really want a low impedance source.

What I am describing as the standard for testing, that is used for testing harmonics in Europe, is they actually do the testing without a line in-between. They use a low impedance source connected directly to the product. But then knowing the current that is drawn by the product allows you to estimate what the losses will be
through various different line impedances.

And the advantage of that then is that
as you have different impedances you can estimate
the losses in a variety of different situations.
Whereas if you measure the losses in only one
situation then you have the -- essentially you get
the losses for only one possible distribution
impedance.

Where, as I say, the procedure that
measure the current with a clean wave form and
then calculates the losses allows you to calculate
them for a wide variety of different possible
distribution systems. And we believe that that
can then be used to get a much better idea of what
the losses will be in a larger, in an actual
setting.

MR. FERNSTROM: Commissioner?

PRESIDING MEMBER ROSENFELD: Yes, Gary.

MR. FERNSTROM: Gary Fernstrom. If I
could add something. One of the principal
advantages of approaching this the way Dr. Bendt
suggests is that the losses from multiple products
with poor power factors are not simply additive,
they are compounding. And by measuring the power
factor and approaching this analytically you can
get a much better estimate of what the effect of multiple products is.

PRESIDING MEMBER ROSENFIELD: Okay, Gary, thank you. Okay. Do we have other, somebody else on the phone?

MR. ALBERT: Hello.

ADVISOR TUTT: We hear you.

MR. ALBERT: Okay. This is Larry Albert again from Black and Decker representing PTI. The comment about --

PRESIDING MEMBER ROSENFIELD: I'm sorry, Larry, would you give us your last name again.

MR. ALBERT: I'm sorry, Albert, A-L-B-E-R-T.

PRESIDING MEMBER ROSENFIELD: Again, okay.

MR. ALBERT: Okay, again. The comment about taking the measurement and performing the evaluation analytically is correct providing the impedance that you make the measurement under is the impedance under which you are going to evaluate it.

It is not truly possible to be able to, for example, take the measurement with a zero impedance source, and take the power factor at
that point and be able to predict how the power factor will change under a variety of different other source impedances without knowing something about the input impedance of the battery charger itself. Consequently, if the measurement of power factor is done under a zero impedance condition the power factor would be unrepresentatively low.

And therefore will -- And therefore if you were to apply the effect of that additional current to the scenario where you anticipated having a higher source impedance you would get an unrealistically large amount of additional loss.

The test procedure that is used in the IEC test demanded a specific source impedance. That is intended to evaluate, it tends to represent what they believe to be a specific impedance that they can relate to a variety of different installations. So in that way it prescribed what that impedance is going to be. And so what that does is it provides you with a more accurate reflection of what the power factor is going to be.

So if, for example, you measure it with a zero impedance source, then obviously the losses associated with that would also be zero. So that
can't be a meaningful measurement. If the measurement was made with, for example, an impedance of half an ohm or something like that, that would give you a higher power factor. However, that power factor would be the right value to use for any calculation that was being used with that similar source impedance.

But the problem is there is no way of evaluating it accurately, measured at zero and applying it to some other impedance, because that impedance affects the power factor.

DR. BENDT: And this is Dr. Bendt. I would agree with Larry that the source impedance does result in small changes in the measured power factor. I don't believe that those changes are going to be the big factors that affect the energy savings. I think that while it is technically correct we are looking at rather small variations there and I don't think those are the big issues. But Larry, I am happy to continue working that out. As we go into talking about proposed standards I think we are going to have a very interesting conversation proceeding on this.

MR. ALBERT: Looking forward to it.

PRESIDING MEMBER ROSENFIELD: I will make
the comment, of course, that in the case -- we
have, for good or for bad, blundered into a system
in which we measure total energy at the device.
That is, when one says this is a 75 watt
incandescent lamp, we all know that there are US-
wide, I don't know, what, six percent transmission
losses and three percent distribution losses and
so forth, and we just ignore that. So putting in
for power factor only is interesting to calculate
but it is not the world we have blundered into, is
it?

DR. BENDT: And I would agree with you
that the effects here are not huge effects. The
amount of energy that is available by improving
power factors across all products probably is the
sort of three to ten percent that you are talking
about. Some products contribute to that more than
others and we would like to be aware of that and
be aware of the energy costs that go with that.

PRESIDING MEMBER ROSENFELD: I agree.
Well, I guess you experts will figure it out.

Anybody else on the phone?

MS. BARONAS: Dr. Rosenfeld, do you hear
me?

PRESIDING MEMBER ROSENFELD: Yes ma'am.
MS. BARONAS: Oh, wonderful. I am the chair of the IEEE Portable Computer Battery Working Group and I would like to comment about your references --

PRESIDING MEMBER ROSENFELD: Hold it, we need to know your name.

MS. BARONAS: I apologize. My name is Jean Baronas. I am an employee of Sony Electronics.

PRESIDING MEMBER ROSENFELD: And can you spell Baronas.


PRESIDING MEMBER ROSENFELD: And you are a employee of?

MS. BARONAS: Sony Electronics.

PRESIDING MEMBER ROSENFELD: Thank you, Jean, go ahead.

MS. BARONAS: Okay. I am also the chair of the IEEE Portable Computer Battery Working Group. And I wanted to comment on the references in the draft on page three. The IEEE 1625 has been revised, it has a new title. And the anticipated publication date is 26 September 2008.

I would appreciate it if you would adopt this new reference, which is called IEEE Standard
for Rechargeable Batteries for Multicell Mobile Computing Devices. This 2008 standard is more indicative of the state of the art and represents many companies' contributions. By the way, I did bring this up at the May meeting that the Commission held in Sacramento.

And another point. I just want to thank Dr. Bendt for Section F of the draft on page 15 where access to the battery for discharge test is addressed. We really appreciate that the manufacturers' instructions for disassembly of the battery -- our reference there and that the operator is recommended that they follow those instructions.

Thank you, this concludes my comments.

PRESIDING MEMBER ROSENFELD: Melinda, did you get that information or do you need an e-mail from her?

MS. MERRITT: We --

PRESIDING MEMBER ROSENFELD: I can't hear you, obviously.

MS. MERRITT: Hi, this is Melinda. We will have the transcript from this meeting so we will have everything exactly as spoken. And we will probably follow up with an e-mail with Jean.
MS. BARONAS: Thank you, Melinda. I'll be in touch.

PRESIDING MEMBER ROSENFELD: Thank you very much, Jean. We need all the help on these details we can get.

MS. BARONAS: Okay, thanks everyone.

MS. MERRITT: So I think that concludes our --

ADVISOR TUTT: Before you conclude I would just like to say one thing. The staff has gotten a lot of kudos for the work involved in the battery charger test procedure and I would second those. I think that it has been a long road and the staff has done a wonderful job here. But I also would like to say that Ecos Consulting and AHAM and PTI have worked very well together and with staff on this and it has been a pleasant process all along.

PRESIDING MEMBER ROSENFELD: Thank you, Tim. I echo all of these warm feelings.

MS. MERRITT: Thank you. And I do too. It's been a very informative and a very congenial process. Very welcome. So that concludes our section on the battery charger system test procedure.
Next we are going to take a moment to
download the presentation by Leo Rainer on the
next topic and also to quickly download the
presentations that we have received so we can make
some copies available.

PRESIDING MEMBER ROSENFELD: Melinda,
you wanted a couple of minutes and we are a few
minutes ahead of schedule anyway. What do you say
we take a five minute bio or coffee break?

MS. MERRITT: Sounds great.

PRESIDING MEMBER ROSENFELD: Sounds
great. Let's start again at quarter to 11.

(Whereupon, a recess was taken off
the record.)

PRESIDING MEMBER ROSENFELD: Okay, I am
chastened. The five minute coffee and bio break
idea doesn't work. Next time I'll make it ten.

Okay, I guess we are on to residential
pool pumps and portable electric spas. And we
have a staff report, Melinda?

MS. MERRITT: Correct. We have Betty
Chrisman from the program staff who will make an
overview of this topic.

MS. CHRISMAN: Thank you. Once again
for the record, my name is Betty Chrisman and I am
with the Energy Commission's Appliance Efficiency Program staff.

There are a few inconsistencies in the current portable electric spa test method. The current test method specifies minimum water temperature but no maximum; maximum ambient air temperature but no minimum temperature; and reporting of insulation R-values, which are not needed to determine energy efficiency.

The proposed regulatory language will insert two-sided temperature tolerances for both water and ambient air and remove the spa insulation R-value and spa cover R-value from data reporting requirements.


These standards are current law.

The standard requires use of multi-speed motors and controls for pool pumps greater than one horsepower.

The current scope of the appliance efficiency regulations does not include
replacement pool pump motors installed in existing residential pool pumps.

The original intent of the standards adopted in 2004 was to include both pool pump and motor combinations and replacement pool pump motors.

The proposed regulations require: All replacement motors with a capacity of one horsepower or more to have at least two speeds, clarifies the definitions, and corrects the current standard to explicitly include replacement pool pump motors in the scope.

Additionally, testing and data certification requirements are added for Curve C in order to facilitate compliance with the Title 24 building standards.

Data collection is being included to show compliance with the pump control requirements.

And the existing marking requirements are being updated in order to better inform installers and inspectors of the two-speed controller requirements found in Title 20.

The proposed regulations are feasible and cost effective. The proposed amendments do
not increase or decrease the required efficiency
of the existing standard. The cost-benefit
analysis has been updated to better represent the
market conditions of 2008.

Specifically staff's analysis shows that
the proposed standard is cost-effective,
reflecting an incremental cost of improvement per
unit of $420. With the reduced total costs to the
consumer over the design life of the residential
pool pumps equaling $1,223. Residential pool
pumps current annual statewide energy use is 1,760
million kilowatt hours as of 2008.

This concludes staff's presentation on
the proposed changes to portable electric spas and
residential pool pumps. Thank you.

PRESIDING MEMBER ROSENFELD: Thank you,
Betty. We have some blue cards. Is there anybody
first in the room who wants to make some comments?

MS. MERRITT: Art, I believe first we
will be hearing from Pacific Gas and Electric
Company and Davis Energy Group. This is Leo
Rainer.

PRESIDING MEMBER ROSENFELD: Sorry, Leo,
I goofed.

MR. RAINER: I am Leo Rainer with Davis
Energy Group, here representing PG&E. I would like to thank the Commission for allowing us to speak on this and --

PRESIDING MEMBER ROSEN Feld: Microphone, Leo.

MR. RAINER: A little more?

MR. PENNINGTON: Speak up a little louder.

MR. RAINER: How is that?

PRESIDING MEMBER ROSEN Feld: You're tall.

MR. RAINER: I'm tall and I don't like to bend over this far. But I'll do it.

(Laughter)

MR. RAINER: I am going to talk about pool pumps first. I didn't get things in order. The Commission talked about spas first. I could just cover spas quickly and then we could go to pools and split up the questions. Melinda, should we just cover spas?

MS. MERRITT: I would just go through.

MR. RAINER: Okay. I am going to do a little bit of discussion before my presentation to try to bring people up to speed on horsepower.

That has been one of the contentions.
The regulations are written in terms of total horsepower. The pool industry discusses pool pumps in terms of nameplate horsepower. So when someone in the industry talks about a three-quarter horse motor they are talking about a three-quarter horse nameplate motor. Now that is typically a full-rated motor, meaning it has a service factor of 1.67. And that means it has a total horsepower of 1.25.

Now I won’t go into it could also be an upgraded motor, meaning it has like a 1.2 service factor and it has a different total horsepower. I’m going to stick with typical industry conventions, which is full-rated. And in my discussion I am going to be using industry nameplate. I am going to be talking about three-quarter horse motors, one horse motors.

In the regulation we use total horsepower and that's because total horsepower is the only thing you really can regulate. If you regulated nameplate horsepower you would allow games with the service factor and you could come up with any nameplate horsepower you wanted by adjusting the service factor. So that's the reason that the standards are written in terms of
PRESIDING MEMBER ROSENFELD: Leo, let me exhibit my ignorance. I have never a cite like that before. That's a huge service factor. Can you say a word or so about my deep confusion.

MR. RAINER: Service factor. The reason for service factor, as most people know, is really for safety. You need a safety factor when you are installing equipment. The service factor for small pumps is enormous. And the reason that it has been -- The industry can probably help me out.

But probably about 40 years ago the industry was having problems with failures in pool pumps due to their installation being outside in hot conditions and the weather and they asked for a higher service factor so that they could replace the same size horsepower pump and still get lifetime out of it. So they increased the more typical 1.25, 1.4 service factor up to 1.67 on the smaller pumps. As you get up larger you can see you get service factors that are more typical of what service factors really should be.

What also happened is once you got these large service factors you then also got the manufacturers playing games with the service
factor to come up with up-rated pumps. So that you could sell a three-quarter horse up-rated pump, which would be a --

Let's say you could sell a one horse up-rated. It would be one horse with like a 1.25 service factor, which would have the same total horsepower as a three-quarter full-rated. So you could say, I'm going to sell you a one horse motor for the same cost as a three-quarter. Now it's the same motor. They were playing games and saying bigger is better and larger horsepower. So now you have not only is the service factor large but it also doesn't always mean anything.

But this is what the industry is at right now. We tried to help somewhat by requiring the labeling of total horsepower on both the pump and the motor. So that when motors get replaced -- What is important is that you do not replace a motor that is smaller total horsepower than what is on the pump currently because then you will burn the motor out. It's okay to replace, put too large a motor on an existing pump but too small a one is dangerous.

PRESIDING MEMBER ROSENFELD: I'm living in a world in which if I look at the nameplate on
a three-quarter horsepower motor, but I measure
its load while it is actually running it will be
way up there at --

MR. RAINER: We hope it won't be up at
1.25. Hopefully that three-quarter horse is on a
three-quarter horse pump.

PRESIDING MEMBER ROSEN Feld: Okay.
MR. RAINER: And it might be drawing,
let's say, one horse. It's probably putting out
more than three-quarters.

PRESIDING MEMBER ROSEN Feld: But not
1.25.

MR. RAINER: But hopefully it's not at
1.25 because then you would be exceeding the
service factor and you would have a shorter life.
But yes, it is probably drawing significantly more
than three-quarter.

MR. FERNSTROM: Commissioner, if I could
add something. This is Gary from PG&E.
Representatives from Jandy have told me that not
only the motors but the pumps in fact have a non-
written, non-published, non-labeled service factor
as well. So you could well get a three-quarter
horsepower nameplate product that is in actuality
a one horsepower pump in terms of the impeller and
the load that is placed on the motor.

PRESIDING MEMBER ROSENFELD: The regulations that we just went through are all in terms of nameplate.

MR. RAINER: No, they are in terms of total horsepower.

PRESIDING MEMBER ROSENFELD: They are in terms of total horsepower.

MR. RAINER: And the reason for that is because that -- Total horsepower does mean something.

PRESIDING MEMBER ROSENFELD: Yes.

MR. RAINER: It is not used in industry and that is the difficulty. Is that we are talking total horsepower, industry talks nameplate horsepower.

MR. FERNSTROM: And much to my amusement the highest service factor I have seen is 2.1. Where in fact the motor is twice as big or has a total horsepower rating 2.1 times what the nameplate says.

MR. RAINER: So this is really -- I am going to be talking about three-quarter horsepower motors quite a bit here. When I say three-quarter horsepower motor, just to let you know, that's a
three-quarter horsepower, full-rated, 1.67 service
tfactor, 1.25 horsepower total. So in other words,
under the current regulations it would be required
to be two-speed.

PRESIDING MEMBER ROSENFELD: Thank you

for getting --

MR. RAINER: Maybe we can come back to
this after.

PRESIDING MEMBER ROSENFELD: -- getting

me partially unconfused.

MR. RAINER: You are not the only one.

MR. FERNSTROM: I was going to say, if
we could add any more confusion to the discussion

we would be delighted.

(Laughter)

MR. RAINER: I am going to address some

of the IPSSA issues. The Independent Pool and Spa

Service Association submitted comments in

September based on the proposed language. And I

am going to address specifically their concern

that two-speed pool pumps operating on low speed
do not work well with sand filters, erosion

chemical feeders and solar heaters.

And then they also provided an example
to show that two-speed, three-quarter horse,
that's a three-quarter horse nameplate motor, does not save energy compared to a single-speed three-quarter.

And that the use of three-quarter horse replacement motors by the industry in order to downsize larger pumps provides significant energy savings. And by requiring that replacement motors be two-speed we are removing that significant energy savings opportunity for the industry.

So just a note about things we do agree upon. I would like to make a comment that IPSSA has been very agreeable with our discussions and that we both are on the same side of the page as far as both wanting energy efficiency for swimming pools. They do their best to provide energy efficient pool pumps for their customers. And they have their concerns as far as serviceability, we have our concerns as far as energy savings.

We have had a number of very good meetings. We have come to agreement on a number of assumptions that are critical in terms of deciding on the energy efficiency. One is the average number of hours of operation of a single-speed pump. We are going to be using 4.2 hours per day. Our initial analysis used 4.6 so we have
come down to 4.2. I'll talk about their initial
calculations used 3.75.

We are going to use two hours per day of
high-speed operation. In other words the two-
speed pool pump has to operate at high-speed for
two hours to provide operation of the pool cleaner
and the skimming operation. So that's two hours
per day.

And then there is some question as to
what pool system curve should be used in terms of
analysis. We had used the curve A, which is the
lowest pressure drop of the two curves that were
in the original standards. We used that for our
analysis.

IPSSA had proposed using some data that
they had gathered for a curve that is about
halfway between A and C. C is the less-
restrictive new curve that is being proposed for
use with Title 24. We think that is a reasonable
curve to use so that's the one we used for the
analysis. Actually the curve that is used, A, C
or even B, doesn't have a large effect on the
cost-effectiveness because of the characteristics
of the curves.

So those are our agreements. I am going
to talk a little bit about the other comments.

First, sand filters.

PRESIDING MEMBER ROSENFELD: Leo.

MR. RAINER: Yes.

PRESIDING MEMBER ROSENFELD: Go back one.

MR. RAINER: I will try.

PRESIDING MEMBER ROSENFELD: Good luck.

MR. RAINER: There, I got the right one.

PRESIDING MEMBER ROSENFELD: I live in Berkeley, I don't know much about swimming pools. The two hours a day of high-speed operation. You say that is necessary to do skimming and what?

MR. RAINER: Operating of automatic pool cleaners. Those are the little things that wander around the pool, they spray water around, mix the water. Those don't operate well on low speed, they need the higher pressure to operate. So in order to get distribution and cleaning -- and skimming operation is the removal of surface debris to the skimmer, which is the top return in a pool.

PRESIDING MEMBER ROSENFELD: And it is generally accepted that we are stuck with those two devices at high-speed?
MR. RAINER: I actually don't have good numbers. I have numbers anywhere from 60 to greater than 90 percent of pools have automatic pool cleaners. So I think two hours is on the high side but we are willing to -- we had come up with a 1.3 hour average but we are willing to come up with a two hour agreement. But I think that is quite conservative. I don't think -- There are very few pools that would need longer than two hours of high-speed operation.

PRESIDING MEMBER ROSENFELD: Thank you.

MR. RAINER: So sand filters. Sand filters represent a very small fraction of the pools in California. It's very regional in terms of pool equipment, both nationally and within California. Within California about ten percent of pools in the PG&E territory have a sand filter, almost none in Southern California have sand filters. So it's less than ten percent of pools have sand filters.

But there is some concern that operating at low speed does not use the sand bed. And this is true that when you are running at low speed you only use about the top two inches of the sand filter. It doesn't fully penetrate the sand bed.
However, in discussion with -- I have talked with three pool experts who say there is not a problem using sand filters. And that operating on high speed at least a half-hour will allow the dirt to penetrate the full depth of the bed. And that we are already assuming two hours of operation on high speed so this is no additional high-speed operation that would be required for same filters.

Erosion chemical feeders. This is a long name for what would be called an automatic chlorinator. These are devices that automatically add chlorine or bromine sanitizing chemicals to the pool water. They work by putting solid chlorine into a canister that water is run over and then it is eroded. In other words it just dissolves into the water. They require what are called on-line or in-line -- off-line or in-line.

The in-line ones are actually in the line of the pool and they are typically not recommended because they add restriction. Off-line have a pipe around the heater and the filter to provide flow through the device.

Talking to manufacturers they say that they need about 20 gallons per minute of flow.

And three-quarter horse, two-speed pumps, which
are the smallest that we are requiring, can provide 20 gallons per minute on the most restrictive curve, which is Curve B.

Also discussing with other pool experts, these can be adjusted. There is an adjustment knob on them. And we are operating them at high speed for two hours per day and then low speed for the rest of the time. You can adjust that adjustment so that your chemical balance is correct. You may take a little bit of time to get it correct when you go from a one-speed to a two-speed but there is not a problem in actually getting it set up.

And lastly, solar heaters. A fraction of pools, about 12 percent of pools in California have active solar heating. These are panels through which the pool water is circulated at the times of the year when you would like additional heating to the pool.

The problem with solar collectors is you add a significant amount of head because you are putting these collectors on the roof, typically. Maybe even the roof of a two-story house. They do add significant head and the need to at least start them on high speed. And there are
definitely collectors which will not maintain flow
on low speed, at least without changes to the
system.

We think this is a valid concern so we
have adjusted our calculations to account for
this. Again, the current residential appliance
saturation survey shows that 12 percent of pools
have solar pool heaters. We assume that about 85
percent of these have a single pump that would
require it to operate on high-speed and that we'd
operate it about three months of the year to add
additional heating. All those together mean that
about three percent of the pools would have to
operate full-time on high speed. You would not
get the energy savings of operating on low speed.

There is a simple fix if you want to use
a two-speed pump with solar, is to add a booster
pump to the low speed operation, but that's an
added cost. But that's a much more efficient way
to operate this whole --

PRESIDING MEMBER ROSENFELD: What would
be the payback time for that instead of paying
your extra electric bill?

MR. RAINER: I didn't analyze that but
that would be a good thing to add. But that's,
again, that isn't something that is in the regulation. We can't require -- This being Title 20 we can't require that people who buy a two-speed pool pump tell us whether they have a solar system and they need to purchase a booster pump. But that is something that could be addressed in Title 24.

Now I am going to talk about the --

MR. FERNSTROM: Excuse me, Leo.

MR. RAINER: Yes.

MR. FERNSTROM: This is Gary from PG&E. If I could add, for those consumers that have them I think there is a good voluntary energy efficiency program opportunity with solar pool heating that has not to do with the natural gas that might be saved but the reduction in electric pumping load if the solar collector presented less resistance to the flow of water.

PRESIDING MEMBER ROSENFIELD: That means a different design for a new solar collector. This isn't a retrofit measure, Gary, that you are suggesting, is it?

MR. FERNSTROM: No, it wouldn't be a retrofit measure because it is contingent upon the solar collector itself.
PRESIDING MEMBER ROSENFELD: But it could be an incentive program.

MR. FERNSTROM: I believe there is an opportunity, yes, for that.

MR. RAINER: Okay, I am going to address one of the other IPSSA comments, which is the economics of changing a three-quarter horse, single-speed pump to a three-quarter horse, two-speed pump, as would be required if replacement motors of greater than one total horsepower are required to be two-speed.

The initial IPSSA analysis resulted in a -62 kilowatt hours per year savings. So obviously not cost-effective. Some of the assumptions in there. One is the single-speed operation of 3.75 hours per day. That's been increased to 4.2. Their estimate of low-speed power was based on a full-load amp or amp measurements and the voltage resulting in a low-speed power of 540 watts.

This doesn't take into account power factor, which we have been discussing in the previous discussion. Power factor on the low-speed, because these are small motors, is typically about 60 percent. And measured low-speed operation from listed pumps at low-speed is
typically between 300 and 350 watts. The analysis that we are doing used 342 watts for low-speed operation.

Also the analysis looked at a single pump pair, just the Pentair Whisperflow in single-speed and two-speed. Actually that comparison is favorable to two-speed. But we felt that we should look at the entire set of two-speed pumps available so we looked at a set of seven pumps and took the average. And that actually is more conservative than looking at just the Whisperflow pair.

The results of using the above assumptions, including three percent to operate on the high speed to account for solar, is that there is a savings of 516 kilowatt hours per year for a pool going from a three-quarter horse to a three-quarter horse two-speed. However, the cost-effectiveness is more dramatic. The benefit-to-cost ratio comes out almost exactly at one. So this is a balanced measure.

However, the three-quarter horse represents about one-third or less than one-third of the current pool pumps in California. So I am unsure what the total program looks like.
The blue bars here are the savings for each of the nameplate horsepower pumps. Starting on the left the three-quarter horse, one horse, one-and-a-half horse and two horse. About less than a third of current pumps are three-quarter, another third are one horse. About 20 percent are one-and-a-half horse and about ten percent are two horse currently in California.

As you can see the energy savings increases as you go up in size. And this is the energy savings going from single- to two-speed. In the yellow are the savings that would be accounted for reducing the size of the pool pump down to a three-quarter horse, single-speed. This is the option that IPSSA would like to maintain by allowing for three-quarter horse, single-speed replacement motors.

You can save a significant amount of energy doing this and it is highly cost-effective because your cost is, you are going to actually a smaller motor and less cost. But you are forgoing about 200 kilowatt hours per year typically for any of them. The two-speed is a higher energy savings and still cost-effective. Your benefit-to-cost ratio for the one horsepower is about 1.4,
and for the one-and-a-half horse and two horse
your benefit-to-cost ratio is about two.

So when we put all these together,
three-quarter horse, two-speed motors save a
significant amount of energy, though currently at
marginal economics. A couple of comments on that.
Three-quarter horse, two-speed pumps are currently
expensive. There are not a lot of them. We
expect the cost for three-quarter horse, two speed
pumps to come down.

Manufacturers are also about to release
efficient low-speed, two-speed pool pumps.
Currently the low-speed operation of two-speed
pool pumps is low efficiency, as can be seen from
the low power factor. Basically reduce the number
of poles. AO Smith, one of the major
manufacturers, will be releasing a high-
efficiency, two-speed pump, which will improve the
economics significantly.

Also, if we were to allow for three-
quarter horse, single-speed replacement motors, a
significant number of replacement motors would go
to the single-speed, three-quarter rather than to
a two-speed. And the lost energy savings here, as
represented in the top row, is what would be for
the current 45 day language where 100 percent of
pools are replaced with two-speed.

If we assume that half of those go to
single-speed because of the single-speed being
available we would be losing -- over the ten year
lifetime of the motors we would be forgoing 93
gigawatt hours of energy savings and 44 megawatts
of demand.

So finally, our recommendations. We
recommend retaining the current 45 day language
which stipulates one total horsepower for
replacement motors. This provides consistency
with pump/motor combinations which is currently in
law. And it prevents a loss of savings due to
going to single-speed motors rather than two-speed
motors.

We do propose a new -- We will be
submitting comments on a few small changes. One
is we would recommend using the total horsepower
definition in the language. Currently there are
two definitions, one is total horsepower and the
other is pool pump motor capacity, and we think
that is confusing. Total horsepower is used
within the industry and we would like to stay with
the single, consistent definition.
There is some ambiguity as to when the effective date of the replacement motor regulation would take effect. I think it would be good to have an explicit date in the language.

And also there are some suggested changes in terms of multi-speed pump listing. Currently the 45 day language has a change to require two-speed pumps to be listed just at their default speed, which is at a low speed. We think it is important to test multi-speed, both variable-speed and two-speed, at two speeds, both their default speed and their high speed.

And that concludes my presentation on pools. Do you want to take comments on pools and we'll go to spas after?

PRESIDING MEMBER ROSENFIELD: Yes. Bill Pennington is signaling.

MR. PENNINGTON: I have a question about Slide 10. Could you go back to Slide 10. My question is, how feasible is it to go from an existing system that is using a two horsepower motor to a three-quarter horsepower?

MR. RAINER: It actually is quite feasible. What they do is they replace the motor with a three-quarter and they replace the impeller
with a three-quarter horse impeller. So you use the same pump housing. It obviously depends on the type of pool pump. If it is an older, like let's say an older bronze pool pump, I would expect that the service person would not do that and would replace the entire device. But on many pool pumps that is quite feasible. And there are people from the industry in the audience who I think might be able to speak more to that.

MR. PENNINGTON: So making the --

MR. FERNSTROM: Bill, Bill, if I could add something. This is Gary from PG&E. Leo is correct in that it technically quite feasible. However, oftentimes we see pools with one motor serving all of the pool-related functions. So the motor might serve the solar collector, the associated spa and so on.

In that case the builder might have simply used a two horsepower motor. And substituting a three-quarter, while it would be adequate for filtration, might not allow the spa to perform satisfactorily. So I think the folks from the trade that are here today would say that the answer to the type of question you have raised depends strongly upon the pool and it varies a lot.
from pool to pool.

PRESIDING MEMBER ROSENFIELD:  So Gary, how would you get around that?  Would you talk about exemptions for multipurpose?

MR. FERNSTROM:  Well my solution would be the two multi- or variable-speed. It gives you the benefit of having the two horsepower there if you want it and need it for the spa and it gives you the advantage of a much lower horsepower for ordinary filtration.

PRESIDING MEMBER ROSENFIELD:  Okay.

MR. PENNINGTON:  So I have a question about what Leo said related to changing the impeller or making changes in the pump that would accommodate a drop down from a larger to a smaller motor. How do the costs of those kinds of modification changes to the pump compare to the cost of going to a two-speed motor? There seems to be an implication here that it is considerably lower cost to convert to three-quarters than it is to install a two-speed motor. And so I am trying to understand, is that real or, you know?

MR. FERNSTROM: I would have to defer to our experts from the trade because I don't have direct knowledge of that. But here are the
component issues associated with it. To downsize the impeller you need a smaller impeller and the time associated with installing it. You need a less expensive downsized motor. To go to the two-speed you don't need to change the impeller but you are buying, at least in the short run, a more expensive two-speed motor. But I see Celia is here and she probably knows the answer to this better than any of us.

MS. HUGUELEY: This is Celia Hugueley. I am with Oasis Pool Service and IPSSA.

As far as downsizing goes, we have to take the impeller off every time we change a motor so it is not too much extra. It is no different in the labor, you still have to change the seal and the impeller. And so the incremental cost I think Leo, you established or staff came up with $420. At other times I have seen $477 as the incremental cost of upgrading to a two-speed. So I would, you know, just back off of that. So you have approximately $500, you know. The impeller probably costs $35 so somewhere a little shy of $500 less to downsize.

MR. PENNINGTON:Could you --

MS. HUGUELEY: And it has the same,
because it has the same timer and you don't have
to change any of that.

MR. PENNINGTON: Could you give an
educated guess as to what frequency of occasions
would you consider downsizing from a two-speed to
a three-quarters? You have the situation where
the motor was sized, as Gary was suggesting, to do
all the functions at the pool. That would mean
that you wouldn't do that 100 percent of the time.

MS. HUGUELEY: Right.

MR. PENNINGTON: Could you estimate what
percentage of the time you might do that?

MS. HUGUELEY: I guess I am not clear.

How we would typically size a pump, and that would
include two speeds as well, is we have to size to
the maximum load. In other words, if they turn
everything on, the solar, the sweep, and
everything at one time, that pump has to be able
to accommodate.

But actually more defining when we size
pumps is the size of the plumbing that exists.
Many times pool builders oversize their filter
pumps. That is why we are so savvy about
downsizing. Because we have been doing it for a
long time. Because many times they will put too
big a pump on too small a plumbing and it
cavitates and it is noisy and inefficient. So,
you know, as far as statistically giving you an
exact number, I don't know but it is a frequent
occurrence.

Now if I had a two-speed already in
existence on a pad, you know, we would probably
work with the two-speed, you know, and keep the
same system. Because they would already have
their timer, they would already have all that.
This is more of -- What we were talking about is
we have an existing single-speed system that we
would, rather than going up to two-speed we would
just downsize.

MR. PENNINGTON: Right.

MS. HUGUELEY: And a three-quarter horse
pump on two-inch plumbing will put out, you know,
in many cases 75 to 80 gallons a minute in a well-
designed system. Which accommodates most, quite a
bit of the swimming pool world.

MR. PENNINGTON: All right, thank you.

MS. HUGUELEY: I had a couple of
questions for Leo. On your, I think it's the next
graph. On your hours of operation, that is
assuming also 4.2 on the low-speed running, is
that right? You didn't --

MR. RAINER: The analysis is done by assuming that the pool is operating for 4.2 hours on single-speed.

MS. HUGUELEY: Right.

MR. RAINER: So we estimate how many gallons total per day are turned by a single-speed at 4.2 hours.

MS. HUGUELEY: Right.

MR. RAINER: And then the two-speed motor operates at high-speed for two hours. That turns a certain number of gallons. Whatever number of gallons is left then has to be operated for the number of hours needed at low speed.

MS. HUGUELEY: Okay. It just wasn't on the graph and I just wanted to make sure they understood that it is also running on low speed.

MR. RAINER: Right, yes. So it's running at two hours on high --

MS. HUGUELEY: To come up to an equal number of gallons.

MR. RAINER: -- and then some amount, typically about six hours on low speed.

MS. HUGUELEY: And on your suggestion for a default on a variable speed measuring the
default speed. How is that going to be defined, the default speed?

MR. RAINER: The suggestion, and I understand this is how they have actually listed them so far, is to list the multi-speed or variable speed pumps at their high speed and then at the speed that they have the highest energy factor. Which would be the rate that you would want to operate it at. It is not an easy point to assume because you can't just specify a certain flow rate.

MS. HUGUELEY: Because it would be so contingent on what it is installed on.

MR. RAINER: Well remember, this is at a -- each of these is at a specific curve.

MS. HUGUELEY: Okay.

MR. RAINER: So the Curve A, Curve B and Curve C would possibly be at different rates.

MS. HUGUELEY: And then will that be defined in what they post with the CEC so that we can look at that and say, oh, 750 RPM or whatever? Will we see that?

MR. RAINER: The RPM is now, that is an additional -- in the current language the RPM has been added to the table.
MS. HUGUELEY: Okay.

MR. RAINER: So you have new RPM.

MS. HUGUELEY: It is just not currently on there?

MR. FERNSTROM: And if I could add, the flow is also indicated at that operation point. So if you want to know the performance you have got that listed.

MS. HUGUELEY: Right. Okay, thank you.

MR. RAINER: If there are no further questions I will move on to spas for one slide.

ADVISOR RHYNE: Actually Leo I had one additional question. You mentioned the benefit-cost ratio on Slide 9 and then you talked about it again on Slide 10. You happened to mention it. What is the comparison of benefit-cost ratios between the two alternatives there?

MR. RAINER: For downsizing your benefit to cost ratio is negative because you are actually -- downsizing is a lower cost. If you are comparing, let's say on a one-and-a-half horse. You have an existing one-and-a-half horse motor and your options are, A, to go to -- your base case is staying at one-and-a-half horse, single speed.
Your two options would be, one, downsizing to a three-quarter single-speed or going to a one-and-a-half horse two-speed. Downsizing to the three-quarter actually is a lower cost because you are using a smaller motor. So the benefit to cost doesn't even, you can't calculate it. It is actually a lower cost and you are saving energy. The two-speed costs you on the order of $400 but saves you, for one horse saves you 600 kilowatt hours a year and has a benefit to cost ratio of about 1.4 for a lot less. And it has a benefit to cost ratio of about two for the one-and-a-half and two horse.

PRESIDING MEMBER ROSENFIELD: So that's the better investment.

MR. RAINER: That's the better investment from a first-cost perspective, obviously, if you downsize. But over the life cycle of the motor the two-speed is a much better investment.

PRESIDING MEMBER ROSENFIELD: What life cycle did you use?

MR. RAINER: Ten years is assumed.

PRESIDING MEMBER ROSENFIELD: Thanks.

MR. RAINER: Anything further?
As Betty had mentioned, there are some revisions, clarifications to the test method. PG&E has been working with the APSP continually on revising the test method. They have been testing a number of spas at Cal Poly San Luis Obispo and been reviewing the test method.

We are very close to agreement on a number of suggested changes. Specifically some language defining spa volume, exactly. Operation of ancillary equipment, which would include spa sanitary and other devices such as audio and video, which can come with spas.

And also normalization of the standby power to a delta-T of 37 degrees for uniform results. Because there are differences in the test method it is difficult to maintain the environment and the spa temperature and so you get different results based on the delta-T. So the proposal is to normalize to a fixed delta-T based on the results of the test. The power and the actual delta-T during the test.

We will be reviewing these comments with APSP and submitting them before the deadline and we expect that APSP will submit a memo supporting that.
PRESIDING MEMBER ROSENFELD: Thank you.

MR. RAINER: And that concludes my remarks. Any questions?

PRESIDING MEMBER ROSENFELD: Do we have questions or comments on spas? I guess not.

MS. MERRITT: I believe we have blue cards from Bob Nichols representing the Independent Pool and Spa Service Association and at least two other industry representatives wanting to make comments.

PRESIDING MEMBER ROSENFELD: I have Bob Nichols, Celia Hugueley again and Mike Gardner.

MR. NICHOLS: Good morning. My name is Bob Nichols. I am the IPSSA director of Region Three, which is the Northern Los Angeles Area. I am also the Chairman of the IPSSA Outreach Committee and the IPSSA Government Relations Committee. I am here to speak on behalf of IPSSA and its support of the IPSSA public comment submitted on September 2. And I bring with me the full support of the IPSSA Board of Regional Directors.

The Independent Pool and Spa Service Association was organized 20 years ago this year by service technicians in California and has grown
to 3800 members with 88 chapters covering California, Arizona, Nevada, Texas and Florida. Organized in ten regions with each region having a Director on the IPSSA Board of Regional Directors, the governing body of IPSSA. IPSSA leadership and committee participation is completely voluntary. No one gets paid for anything.

Members that have contributed to this project are members that are concerned about energy savings and consumer satisfaction. They understand that if we are to individually succeed in the competitive market we must have the tools to provide the consumer with choices to make a well-informed decision based on their individual needs and financial abilities in regards to energy savings, and provide a selection of high-quality products that provide predictable results and reasonable service life.

Many of our association members have led the way in the installation and use of energy-saving products that have been introduced in the last few years. Energy-saving products in our industry are only now in their first issue, with many manufacturers falling behind in design and production of new, affordable, energy-saving
technology. This lends itself to an inadequate selection of consumer products and a narrow pricing corridor available to the consumer.

We have therefore taken the position that until a manufacturing technology achieves the goals intended by the Title 20 requirements we need to be able to provide the consumer with the option of using three-quarter horse nameplate, full-rated, high-performance pumps and replacement motors as an option in their effort to save energy and reduce their individual energy costs.

Within our comments, the ones submitted on September 2, we compare a three-quarter horsepower, dual-speed pump with a single-speed pump under normal nameplate parameters and prove that the single speed pump conserves more energy than the dual-speed pump. And there has been no argument presented to date that proves otherwise. Maybe a little bit a couple of minutes ago.

(Laughter)

MR. NICHOLS: Basically we are still in the ballpark. As Leo said, we met with PG&E and Leo and have agreed that there's a -- we have agreed that there is a limit to what can be done with the current technology. However, we have not
been able to bilaterally determine the exact level of where that limit should be established. Based on the calculations in our public comment, page six, we have proven the limit to be the three-quarter horse, full-rated, single-speed pump and replacement motor.

Should the legal descriptions and definitions presented in the proposed language changes be adopted, this particular pump and replacement motor will no longer be available to our industry as an option to the consumer for saving energy at a cost that is reasonable and benefit the cost-efficient.

We urge a review of the mitigating circumstances now available that were not previously considered.

Leo had touched base on what an upgraded pump was. I brought with me a little bit of a demonstration. I have two impellers. If you'd like I can bring them up there.

PRESIDING MEMBER ROSENFIELD: We certainly can't see much from here.

MR. NICHOLS: I hear that. It's okay? May I approach? Is that the words?

(Laughter)
MR. NICHOLS: Those impellers are the business end of the pump. You have before you two impellers. One is a half-horsepower full-rated that also doubles as a three-quarter horsepower up-rated. And the other is a three-quarter horsepower full-rated that doubles as a one horsepower up-rated. Is anybody else confused?

(Laughter)

PRESIDING MEMBER ROSENFELD: And they look the same to me.

MR. NICHOLS: They have been marked by the manufacturer with a specific part number. I have the packaging they came in and also a parts list if you want to check me out on that one.

The difference between those two impellers is about nine cubic centimeters in total impeller vane area. Approximately the volume of an average grape. This volume measurement is the only difference between a compliant single-speed, half-horsepower pump and a three-quarter horsepower non-compliant single speed pump should the proposed language definitions be adopted.

The OEM nameplate energy usage capacity of the motors used to drive these impellers is only reduced in service factor by the impeller
horsepower multiplier. The motor's nameplate energy usage is exactly the same. You will find this to be predominant throughout the pump manufacturers' labeling on full-rated and up-rated pumps.

In the initial rulemaking process one horsepower was the threshold of regulation. Our entire industry has worked with nameplate nomenclature for product description long before the inception of Title 20, and interpreted the existing language to refer to the same description.

We have offered evidence to this fact within our public comment. To not return to the existing language and change the definitions to include three-quarter horsepower nameplate pump and replacement motor in an attempt to increase the scope of the existing language will increase energy usage rather than conserve energy and provide absolutely no benefit to cost advantage to the consumer. This proven fact must be considered in the Commission's decision-making process.

I have been asked by a couple of people why we continue to argue the point for the full-rated pump, three-quarter horsepower that is
normally rated 1.25 total horsepower. There are labeled three-quarter horse pumps and you have the impellers right there in the market that are rated less than one total horsepower.

These pumps are classified as up-rated pumps. And in the category of three-quarter horse they are one-half horsepower motors with the same impeller. The smaller impeller that you have there is a one-half horsepower full-rated or a three-quarter up-rated. It's the same impeller, same motor, no savings, nothing but extra usage.

Let's see, I lost my -- I got emotional there for a minute, excuse me.

The confusion exists only for the consumer. Professionals know that these pumps are actually only a one-half horsepower pump and motor combination and they do not compare in performance with full-rated pumps. The consumer expects from our membership a high quality product that has a predictable service life and will perform on an energy efficient basis. The full-rated three-quarter horsepower energy efficient pump and replacement motor is the quality product we must continue to provide to our customers.

In regards to public awareness. In our
research of the California Energy Providers Rebate and Incentive Programs we find there is no reference to the fact that Title 20 is law and regulates what products are to be sold in California. They all imply that it is a good idea to save energy and therefore the consumer has a choice to purchase energy-saving products or not to purchase them.

This lack of support in educating the consumer makes it difficult for the industry to provide energy-saving products and remain compliant and competitive. The lack of knowledge of the requirements of Title 20 within the consumer market lends itself to non-compliant products being sold and installed by the ever-increasing black market of uncertified and unlicensed contractors. We desperately need the help of the energy providers in educating the consumer that the requirements of Title 20 are not just a good idea but they are a requirement of law that must be complied with.

In regards to safety. Within our public comment there is a reference by -- I am going to low this name, okay. Shajee Siddiqui of the Jandy Zodiac Corporation. Indicating concern on
replacement motors nullifying the UL listing of pump motor combinations when a replacement motor is installed other than how the original pump was designed and certified. This issue has not been truly investigated nor have there been guidelines provided by manufacturers of replacement motors.

The service industry cannot provide these guidelines. They must be clearly presented by the pump and motor manufacturers. Due to the lack of guidelines, our position when we met with the Commission staff was that all pumps and motors produced prior to January 1, 2008 should be exempt from Title 20 regulation.

By now proposing to remove the three-quarter horsepower nameplate single-speed pump and replacement motor from our options for downsizing to energy saving levels on existing pool systems. We feel the proposed language, if adopted, will, as we have shown, increase energy usage and consumer cost on an ever-increasing basis.

In closing my comment: We urge the Commission to consider the reality of our calculations and find a way to return the legality of definitions to the benefit of the energy consumer by allowing the nameplate three-quarter
horsepower pump and replacement motor to be compliant with the regulations of Title 20.

Many of our members, including myself, are confident that the producers of pumps and replacement motors will provide the service industry with the energy saving technology that will eventually exceed all of our expectations. But that time has yet to arrive in a fashion that is financially available to the majority of the consumer market.

Technology and manufacturing must do more to provide the service industry with high quality, safe and more affordable energy-saving equipment. Items such as lower horsepower variable-speed or variable-flow pumps with lock-out PIN codes and simplified control systems need to be on the market as soon as possible.

Until this is accomplished the nameplate three-quarter horsepower 1.25 total horsepower full-rated pump and replacement motor is a proven method of satisfying consumer needs and reducing consumer energy costs.

Additionally, we would urge the CEC to arrange a conference of manufacturers, wholesale suppliers, energy providers and the service
industry soon after the adoption of the proposed 2008 language and provide the entire industry an opportunity to clear any confusion and become one body, assisting the state of California and the Commission in our joint effort to conserve energy and reduce consumer costs.

I want to thank you for your time today. And we trust that the Commission will review and consider our comments and bring about a decision that is beneficial to the state of California and the consumers that support our industry. Thank you.

PRESIDING MEMBER ROSENFIELD: I am, as usually, confused.

MR. NICHOLS: May I have the impellers back? Or I have to pay for them when I get home.

(Laughter)

PRESIDING MEMBER ROSENFIELD: Let me ask the staff. When is the effective date for the --

MR. NICHOLS: My understanding is January 1, 2010. Is that still correct?

PRESIDING MEMBER ROSENFIELD: What I am confused about is whether your calculations are long-term calculations or whether you are saying there is a shortage of products and you need a
delay in the effective date.

MR. NICHOLS: There is a shortage of product. There is one major manufacturer that has --

MR. PENNINGTON: Sir, you need to speak into the mic so it gets recorded for the transcript.

MR. NICHOLS: I had to move up so I could hear him.

There is a shortage of product. One major manufacturer, namely Pentair, has dual-speed, three-quarter horse pumps that are available. They are compared in our, in our comment, and the single-speed still outperforms that both in water movement and energy usage.

Aqua-Flo has one dual-speed three-quarter. And a company by the name of Spec that none of us have ever heard of. So the product on two-speed, three-quarters is low, it is almost non-existent.

PRESIDING MEMBER ROSENFELD: Again, I am unclear as to whether you are appealing for simply a delay until more product is available or you are opposed to the whole regulation.

MR. NICHOLS: Basically my comment is
that the three-quarter horse, full-rated pump and
replacement motor is an extremely efficient,
energy saver that could be used for downsizing
from one horsepower, one-and-a-half horsepower.
And in some older bronze pumps the three-quarter
will replace that two horsepower bronze pump
easily, if I heard your question properly.

PRESIDING MEMBER ROSENFIELD: I guess I
am going to say to you to stay for Leo Rainer to
-- Leo, as I remember you showed a pretty
convincing slide with blue lines and -- blue bars,
I'm sorry. The yellow bars and the blue bars.

MR. RAINER: Our analysis shows that
three-quarter single-speed do not save as much
energy as two-speed. You do save energy
downsizing to three-quarter.

PRESIDING MEMBER ROSENFIELD: Yes.

MR. RAINER: But you save more energy
going to two-speed.

PRESIDING MEMBER ROSENFIELD: So we just
have a direct contradiction between you.

MR. RAINER: Yes.

PRESIDING MEMBER ROSENFIELD: You two
folks. How are we going to -- We are going to
take Bob Nichols' comments and have lots of
huddled discussions off-line?

MR. RAINER: In addition we would say

that the three-quarter two-speed does save energy. We would say it is marginally cost-effective but it definitely saves a significant amount of energy. And that the cost effectiveness we expect will rise due to -- Three-quarter, as we have seen, is a small amount of product, meaning the cost is high right now but we expect the cost to drop.

MR. GARDNER: Costs to drop?

MS. HUGUELEY: Costs don't drop.

MR. RAINER: The demand will rise.

MR. GARDNER: It doesn't matter. Costs don't drop, Leo.

PRESIDING MEMBER ROSENFELD: But your figures are based on present costs.

MR. RAINER: Yes, all the figures are based on present costs.

PRESIDING MEMBER ROSENFELD: I guess we should go on to Ann (sic) Hugueley. Are you next? You were next, Ann?

MS. HUGUELEY: Again, this is Celia Hugueley from Oasis Pool Service and IPSSA.

PRESIDING MEMBER ROSENFELD: I stand
corrected. I'll try to say Hugueley from now on.

MS. HUGUELEY: Celia works. People have enough trouble with that. And forgive me for reading my comments but I don't want to miss any of my really compelling points.

I am a member of the IPSSA committee studying the two-speed pump. And I want to thank you for allowing me to speak to you again on the issue of swimming pool replacement motors and pumps.

After the hearing, your hearing in May, it became clear to us in IPSSA that there was a need to verify some of the assumptions put forth by PG&E regarding the energy savings and applicability of two-speed motor replacements.

As you might guess, the summer months are quite busy or folks in the pool business. But we got busy reading the studies that were used to support PG&E's statewide energy savings numbers as well as the CEC pump data, Davis Energy system curves, Leo and Excel and the mountains of other resource materials I won't bore you with.

My husband Mike and I were charged with the task of actually collecting the IPSSA statewide as well as individual swimming pool
data, a process not yet complete.

We have thus far gathered very complete data on 50 of our 150 pools on service. It is a fairly technical process that require knowledge of meter types, labeling variations, pump and other equipment characteristics as well as the various definitions of horsepower and watt.

And then Gary threw in power factor, which is a big topic today, and we had to redo all of our measurements again with a watt meter to get the power factor included. And that is the discrepancy between what we submitted in September, the data that Leo was referring to. We have now gone back and remeasured all of those pools with a watt meter. Suffice to say we have learned lots and lots about watts.

Throughout the summer we met with your staff, Gary Fernstrom and Leo Rainer, as well as consulted with many industry electrical experts. In our meetings and many other e-mails over the summer with PG&E and DEG we worked to make them understand that their initial numbers on energy savings based on 100 percent low-speed pumping on 100 percent of the pools would not really work. We have continuously shared our data as it was
collected and even when it did not necessarily promote our argument, but with the purpose of collecting better, more accurate information. with their help we did so.

From their presentation it seems that we have had some impact. They seem to now acknowledge that most existing pools cannot run on low-speed only and are using the compromise figure of two hours of high-speed running. We are now down to a he said, she said, best guess on whether chlorinators can work and how well. How deep the low speed will be able to penetrate a sand bed, and how many months folks run their solar.

We checked and could find no published reports from manufacturers with this data. We based our assumptions on how well these devices perform when filters are dirty. The low speed has an even lower flow than the worst of dirty filter situations.

Manufacturers through APSP and our direct -- Manufacturers through -- forgive me, I'm nervous. Manufacturers through APSP are happy to tell PG&E anything that will help them enact this regulation. Our pool building bubble has burst in a huge way. Replacement equipment is their whole
market right now and this regulation guarantees high-cost replacement equipment will be installed. IPSSA is the only group that represents our customers. And while replacing equipment is also in our best financial interest, we make more money doing it, we have to return to those pools week after week and defend what we have recommended. What still remains unanswered is whether low-velocity pumping will mix the water adequately enough to distribute the chlorine and other chemicals and filter the whole pool. The established pool filtering turnover rates are based on high velocity pumping. No one has yet studies whether we get the same proportional effects at low speed or how much extra time might be needed to equal the high velocity pumping of a single or high-speed pump at low speed.

PG&E uses a direct gallon to gallon equivalency that is counter-intuitive and completely unproven and undocumented. Obviously what we are trying to do, what they are trying to do is make a clear case for energy savings where such clarity does not yet exist. Pools are as varied as the yards they inhabit and can never be
neatly pushed into a predictable box, which Gary
referred to earlier as well.

With all of our study and field research
the most glaring reality is that our data is
woefully inadequate. Also woefully inadequate is
the data provided by PG&E. The studies used to
support PG&E's statewide numbers are extremely
weak. They are a patchwork quilt with a few
threads to tie them together. They are out of
date and the very minimal field data was
imprecise. Most noteworthy is there is no
information on two-speed pumps.

Our data too is flawed because we as a
company are rigorous in our energy conservation
measures and demand full control of the time
clocks. We have our preferences as to pumps and
filters and it shows in the data. Worst of all,
we have only four two-speed pumps on our route,
all installed this year. Way too few examples for
too short a period of time to draw any meaningful
conclusions as to run times or operational
idiosyncracies.

We contacted Bill Storm who testified at
the May hearing, another IPSSA member, who has
installed two-speed pumps. But he kept no data on
his pools and is no longer servicing them to
follow up for us to get that data.

But I have a solution. PG&E has at its
disposal a significant database of two-speed and
downsized pools from their rebate program.

Please, before you approve any further expansion
of this regulation by including replacement motors
require PG&E to perform a comprehensive field
study of their two-speed participants and then
compare them with an equal number of rebate
participants that were paid to downsize to three-
quarter, now called the 1.25 total.

Let the people who have already
installed their two-speeds, some in for several
years now, show us definitively how long they
actually run their high speed and whether their
sand filters still work. Let's stop all the
guessing and back and forth. Let's stop the hype
and overstatement.

If raw energy engineering and laws of
physics were always perfectly predictable NASA
would never have needed to launch those chimps
into space and John Glenn would have been put into
orbit years before Sputnik. Please, do not make
my customers pay for beta testing the application
of pump affinity laws on their existing pool
systems. Let's scientifically measure and analyze
those already installed. Let's create independent
verification of PG&E's assumptions.

If money for such research is lacking I
think I can speak for IPSSA in saying that we
would be happy to participate voluntarily in a
joint effort to create real, comprehensive,
accurate and useful data. Let's see if they are
saving energy and give us something other than
undocumented assumptions to support the
installation of this equipment.

Thank you. Does anybody have any
questions?

PRESIDING MEMBER ROSENFELD: Gary
Fernstrom, it sounds as if you may want to make
some comments.

MR. FERNSTROM: Thank you, Commissioner,
I have no comment.

ASSOCIATE MEMBER PFANNENSTIEL: But
Gary, let's go to the question, I think, that is
on the table. She pointed out that the data PG&E
could have, should have, on the two-speed pumps
available through the --

PRESIDING MEMBER ROSENFELD: Rebate.
ASSOCIATE MEMBER PFANNENSTIEL: -- the rebate program could be useful in this regard. Do you have the data? Has it been used? What does it show?

MR. FERNSTROM: We don't have the data. It hasn't been used and consequently it is not showing anything. Let me elaborate a little bit on that. We don't have end-use specific measurement data really for any of our customers. The best data we have is the monthly energy use maybe improved a little bit for those customers that now have smart meters where we have load profile information. But we don't have information at the pool pump level.

We could go out to those customers where we know two-speed conversion has taken place and we could determine the operating hours. We could measure the energy use. But that would not necessarily give us an indication of the energy that was previously used by the pump and motor that has been removed and replaced with the new two-speed equipment.

PRESIDING MEMBER ROSENFELD: You can only compare with a theoretical baseload.

MR. FERNSTROM: That's right. And we
have, in fact, done our energy saving estimates quite carefully based on the market characterization information that we do have and we filed it with the California Public Utilities Commission. And so far as I know it has been accepted and reflected in the Database of Energy Efficient Resources, I believe it is.

PRESIDING MEMBER ROSENFELD: DEER.

MR. FERNSTROM: The DEER database. So I am not aware of any other efficiency standard proceeding in which we have been asked to do anything more than we have already done in this case.

PRESIDING MEMBER ROSENFELD: Celia, let me ask you a question. You were asking about data. Did I misunderstand you that you said you had looked at something like 250 pools but only four of them had two-speed motors?

MS. HUGUELEY: Our company services 150 pools.

PRESIDING MEMBER ROSENFELD: One hundred and fifty, okay.

MS. HUGUELEY: And we only have four two-speeds, you know, within our route. Because we have primarily downsized over the years and
only replace things as they wear out. And so this
year there's been four installed, two three-
quarters and two horse-and-a-half two-speeds. So
that is all we have available to us as far as a
database of two-speed.

And I am, you know, really strict with
my customers. I totally control their time clocks
and their programming. I mean, they kind of have
to agree to that. So I keep track, very close
track and keep their pools running optimally.

Our question is whether that's a fair
comparison. You know, when we came up with the
numbers of how long a high speed is running and
how long low speed is running on these two-speeds
outside of my control. So in other words the
hundreds and hundreds of two-speeds that are not
in Oasis Pool Service's route, how long. You
know, it just seemed to me that PG&E has a list of
these people that have put them on for years now.
How long Gary has there been a rebate program?

MR. FERNSTROM: Probably six years now,
Celia.

MS. HUGUELEY: Yes, so we have six years
of data we could collect. It could totally
disprove our concerns about sand filters or
chlorinators and how long they are running low-speed. Because in this process this summer,
  anecdotally, you know, we are talking to a lot of people who they basically run their low speed like
24. The pump is running all the time.

  And in fact some of these controllers, the older controllers that are not compliant now but were previously installed, the default is low speed and that's it. So they run high speed for a certain number of hours and then it's running on low speed the rest of the time. So I just think it would be really nice to have real accurate information as far as what people do when they have their two speeds under their control.

PRESIDING MEMBER ROSENFIELD: So let me see if I understand your basic concern. Leo Rainer talked about two hours a day of high speed. And what you are saying, what you are guessing is that if one looks at the way real world, rebated, two-speed pools run, that it will be more than two hours.

MS. HUGUELEY: The two hours is what we have used on our two-speeds. It is what I consider to be a minimum. And I know Leo considers a lower number to be a minimum but that
is what we operate ours at. I believe that other people might not be as conscientious. I don't know. How many hours do you run yours?

MR. STAACK: About two. One-and-a-half to two.

MS. HUGUELEY: And how long do you run your low speed?

MR. STAACK: About four-and-a-half.

MS. HUGUELEY: So he is in line with somebody, of course he works at the Energy Commission, presumably he is pretty savvy. But he has got a two horse two-speed, is that right?

MR. STAACK: Yes. And I also use it at the low speed.

PRESIDING MEMBER ROSENFELD: Closer to the mic, Bill. The nearest one right in front of you.

MR. STAACK: At the low speed I am capable of operating my little monster machine that I call it, to vacuum during the day.

MS. HUGUELEY: You've got a Poolvergnuegen?

MR. STAACK: Yes.

MS. HUGUELEY: And he has the highest horsepower two-speed. Now we are talking about
three-quarter. I mean, the discussion pretty much -- We have given PG&E, even though we kind of wonder operationally whether in the real world any of these two-speeds are actually saving energy in how they are operated by consumers that are less educated, and pool guys that are less educated for that matter.

But our argument is over the three-quarter because we know, you know, that's the threshold where it puts out plenty of water and is simple and clean and clear. I mean, the controllers that control these -- And currently we are hoping for some change. But the controllers are hard sometimes to even figure out how long people's pumps are actually running without scrolling through lots of programs.

PRESIDING MEMBER ROSENFIELD: Okay, I'm looking at the clock and it says 12:15 and we all want our lunch break. I am thinking that maybe you and Gary and Leo Rainer and anybody else who is interested could huddle for a few minutes off-line in a few minutes.

Gary, you had your hand up.

MR. FERNSTROM: I just wanted to make one real quick comment. We have already done a
lot of huddling. The other comment is we are comparing the experience of one very conscientious pool service firm, plus the experience of other conscientious firms that IPSSA has chosen to survey against one-and-a-half million pools in California. Our information shows that about two-thirds of pools are maintained by the owners themselves, not by pool maintenance contractors.

PRESIDING MEMBER ROSENFIELD: What fraction again, Gary?

MS. HUGUELEY: Two-thirds?

MR. FERNSTROM: Two-thirds are maintained by pool owners themselves, not pool maintenance contractors. When it comes to data the RASS data shows that unit energy consumption, which can be translated into hours of operation. We have the ADM study, admittedly of 2001 which was quite some time ago, which surveyed the pool owners to determine hours of operation.

MR. GARDNER: How many?

MR. FERNSTROM: And claims that they had a statistically significant result.

I heard a question in the background, how many. I don't remember exactly but I believe it was in the order of 4.2 hours of operation.
daily for pool filtration pumps.

MR. GARDNER: That was how many pools?

MR. FERNSTROM: How many pools? All I know is that ADM argued that their results were statistically significant and expressed a confidence interval around it.

In addition to that we hired Opinion Dynamics to survey for us the start and stop time of a random selection of pool owners by telephone and we have that data similarly coming up with something in the order of 4.2 hours. This subject has been studied a lot. We are not here without confidence in our recommendations.

PRESIDING MEMBER ROSENFELD: We do have one other blue card, Mike Gardner. Thank you, Celia.

MR. GARDNER: I'm Mike Gardner. I'm with IPSSA, I'm with Mike Gardner Pools and I am married to her. It's always hard going after her because she covers so much ground.

As regards to this last comment about their surveying single-speed pump owners and not two-speed pump owners. And what we are finding is, even within the pool professional community there is some fear that by going to a two-speed,
and only running maybe two hours or three hours of
high-speed it is not going to be enough to run
only four or five hours. So they tend to want to
err on the other side.

Because honestly, a green pool is hard
to recover. When you don't run a pool enough,
when it doesn't get enough chlorine because the
chlorinator optimally or minimally goes with 20
gallons. We have a hard time sometimes at 60
gallons a minute getting that chlorinator to feed
enough chlorine to keep the pool clear and clean.
So there's a fear. And they buy into that fear
and so they start running them more hours.

Which is why we are asking for the
three-quarter horsepower. While it may not be the
perfect answer. Clearly Gary will admit that he
thinks that the variable-speed is the perfect
answer but they didn't want to legislate that. So
they are taking a little bit lesser view. I'm
saying a little bit lesser view than that, only
slightly. But a three-quarter horsepower single-
speed pump or motor, replacement motor.

Because it will be effective for a large
number of pools but not -- I don't think even 50
percent. If you've got a spa with six jets it
probably won't work. If you've got solar it's too far away or you've got multiple skimmers that are too far away. It may not be the right call. But that's what we are asking for.

I have been doing this 29 years. And I can look at a pool and know that it is going to need only so much pump. And we have always focused on minimizing the amount of energy consumed so that our customer doesn't have to pay for it. And they do appreciate it when it happens. They recognize it. Because we always hear it. They come out to us with the bill, did you see how much money the bill was this month.

And, you know, it's hard. So that's been a focus forever with -- Let me find my comments. There is a great need for empirical data so that we do understand how people are using them. I have looked at the ADM study as well and it is not a very large number of pools that they attacked. The pools that are being built these days are quite a bit smaller than what they were even back then. In fact, if pools are being built at all given the economy.

I know we're running short on time.

I'll just leave it at we really are asking for the
three-quarter, single-speed, full-rated, 1.25
total horsepower to be included as a tool. Not as
the go-to but as a tool. We are also offering the
education of all of our members through --

PRESIDING MEMBER ROSEN Feld: I'm sorry,
I didn't understand that language. As a tool and
not as a go-to?

MR. GARDNER: Not as a mandatory thing.
Not as something that we would always encourage
but as a tool that will give us something to go to
for a particular pool but not as a standard. If
we run into a backyard that needs a horse-and-a-
half pump, absolutely we are encouraging them and
in favor of the two-speed. We do support what you
have been doing and what has been going on.
Because it does save energy at that level.

But if we can get down to a three-
quarter horse from a one horse, a horse-and-a-half
or a two-horse, we will have saved an awful lot of
energy right there just by dropping to three-
quarter rather than staying at the same horsepower
at two-speed.

PRESIDING MEMBER ROSEN Feld: Gary
doesn't dispute that. It's the further economic
savings that I'm concerned with. Okay.
Despite Gary's statement that you have huddled a lot I would like to talk to you, the five of you, for a couple of minutes in a couple of minutes.

I'm sorry, Gary, you get the last word.

No?

Did you finish?

MR. GARDNER: Yes I did, thank you.

PRESIDING MEMBER ROSENFIELD: Okay.

MR. GARDNER: You were still talking. I didn't want to walk away while you were talking.

It seems like it's rude.

PRESIDING MEMBER ROSENFIELD: So it's 12:20 and the schedule is supposed to begin again at 1:30.

Do either of you have comments? Tim or Commissioner Pfannenstiel?

ASSOCIATE MEMBER PFANNENSTIEL: No.

PRESIDING MEMBER ROSENFIELD: Ivin, staff?

Let's talk down there for a couple of minutes. Thank you very much, see you at 1:30.

(Whereupon, the lunch recess was taken.)

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PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345
AFTERNOON SESSION

PRESIDING MEMBER ROSEN Feld: This afternoon is metal halide luminaires and I guess Gary Flamm is going to illuminate us.

(Laughter)

MR. FLAMM: Thank you. My name is Gary Flamm, Energy Commission staff. I guess I need to do the lights here.

The Energy Commission first started looking at metal halide luminaires, I guess around 2003 we got some proposals from PG&E and ACEEE. And so we adopted energy standards for metal halide luminaires 150 to 500 watts in 2004.

And there were two tiers. One tier became effective in 2006 and the second tier became effective January 1, 2008. Basically it prohibits the use of probe-start lamps and requires ballasts at least 88 percent efficient.

Recently the EISA 2007 established federal standards for metal halide luminaires that become effective January 1, 2009. It allows some use of probe-start lamps and requires ballast-efficiencies between 88 to 94 percent, depending on the application. And it allows California to adopt revised standards by December 31, 2011.
So for this round PG&E presented a proposal, a case study. It was a PG&E/ACEEE combined proposal. Which was last modified April 3 and that's the version we have been looking at. And it proposes revising the current Title 20 regulations that the ballast efficiency would go up to around 90, 92 percent, which is equivalent to an electronic ballast or a very superior magnetic ballast. And it is very important because the energy savings was going to help us meet the 1109 indoor commercial and outdoor lighting standards. For those who are not familiar, by 2018 we need to reduce commercial lighting by 25 percent and we need to reduce outdoor lighting by 25 percent. The proposal in these standards, these regulations, in addition to the minimum ballast efficiencies there is a alternate compliance path that we look at as off ramp to the efficient ballast. And one of those off ramps is integral controls that are integrated into the luminaire. And we have a definition of what that means for indoor or outdoor luminaires. Or another compliance path through non-conventional wattage lamps.
So here is the proposed language. Metal halide luminaires rated 150 to 500 watts, manufactured on or after January 1, 2010, shall not have probe-start ballasts, and shall comply with either Path A or B.

A is for smaller wattage lamps, 90 percent efficient ballasts. And for larger wattage lamps, 92 percent efficient ballasts. Or Option B. There’s three options, sub-options. Which is an integral occupant sensor, as defined; an integral automatic daylight control, as defined; or unconventional wattage, which has a sunset date of December 31, 2013.

There are exceptions that are very similar to the exceptions that are currently on the books for California. The exceptions to the ballast efficiencies are if it is a regulated lag ballast; an electronic ballast operating at 480 volts; or a ballast that meets all three of the following: rated only for 150 watt lamps, for wet locations, and for hot locations as specified.

The estimates from the latest study have an incremental cost for this improvement of $75 per luminaire and expected to save $200 over the life so the proposed standard is cost-effective.
And the annual statewide energy use is expected to be 4,010 million kilowatt hours as of 2008.

And that's the end of my presentation.

PRESIDING MEMBER ROSENFIELD: Gary, I don't understand what it means to say, as of 2008.

MR. FLAMM: I'm sorry, Bill (sic), I didn't understand you.

PRESIDING MEMBER ROSENFIELD: I don't understand.

MR. FLAMM: Oh, that was Commissioner --

PRESIDING MEMBER ROSENFIELD: Two billion kilowatt hours as of 2008.

ADVISOR TUTT: On your last slide there.

PRESIDING MEMBER ROSENFIELD: At the very bottom. I just don't understand what the as of 2008 means.

MR. FLAMM: I think that's looking at the first year energy savings. You know, based upon the energy.

PRESIDING MEMBER ROSENFIELD: Oh boy.

ADVISOR TUTT: That sounds like savings, maybe not use.

MR. SINGH: It's the energy use.

MR. FLAMM: Oh, the energy use.

ADVISOR TUTT: In that year?
MR. FLAMM: Okay.

PRESIDING MEMBER ROSENFELD: Oh, it's not savings at all. I just can't read it.

MR. FLAMM: Okay, it's energy use.

PRESIDING MEMBER ROSENFELD: I'm sorry.

MR. FLAMM: I apologize, I misread that.

ADVISOR TUTT: So that's the energy use for all outdoor lighting or all metal halide lighting or how do you know that number?

MR. SINGH: It's all metal halide lighting.

PRESIDING MEMBER ROSENFELD: It's all what, Harinder?

MR. SINGH: It's all metal halide lighting energy use.

PRESIDING MEMBER ROSENFELD: Okay. It's two percent of state power, it's big. Okay.

MR. FLAMM: Okay. Any questions on my presentation? If not I believe we are going to move to the PG&E team that is going to make a presentation. And Steve Nadel, are you on line?

Okay, your counterpart is not on line. So perhaps Amanda can come up and you can start your presentation while Ted hunts Steve down.

MR. RIDER: I'm sorry, he is on the
MR. FLAMM: He is on the line?

MR. RIDER: Yes. Do you want me to patch him through? Okay.

MR. NADEL: Can you hear me?

PRESIDING MEMBER ROSENFIELD: Yes, Steve, good afternoon.

MR. FLAMM: We can hear you.

MR. NADEL: Good afternoon. I kept on hearing people saying, I don't know where Steve is. I kept trying to talk more loudly. Is this volume about right?

PRESIDING MEMBER ROSENFIELD: Yes, you are fine, Steve.

MR. NADEL: Okay, very good. Well, I appreciate the opportunity to talk here now. I am trying to save a little bit of energy by not flying out round trip for basically this roughly one hour session. Hopefully we can do this via conference phone.

On behalf of the PG&E team we are happy to support just about all aspects of this proposed standard. As Gary mentioned, it is based quite extensively on the PG&E team's recommendations and case study.
Gary has certainly made quite a few modifications and provided a lot of valued added. There was a lot of back and forth between our team and the NEMA team, who I assume will be speaking shortly. So this represents a lot of compromise, a lot of progress on many of the outstanding issues. I think this is a very good proposal.

What I wanted to do here is make one suggestion for improvement and then talk about a couple of things that weren't done in this proposal that we think do make sense. I'll describe a little bit the rationale behind that.

The one change we would like to suggest is that for the low wattage lamp case there is now a category where instead of 400 watt lamps that you use a lamp up to 350 watts. We recommend that that 350 watt maximum be reduced to 335 watts.

What happens is all the manufacturers have 320 watt lamps and 350 watt lamps. The 350 watt lamps have been around for a long time. They were designed to be a somewhat energy-saving replacement for these lamps. The 320s were developed more recently on average and those are designed to provide effectively about the same light output as many of the old 400 watt lamps.
using pulse-start technology and using a very high-efficiency ballast.

There's clearly extra energy that can be saved if you use a 320 watt lamp instead of a 350 watt lamp. All five of the significant manufacturers have 320 watt product. It's not like there's a rationale for industry competitive reasons.

And I believe there is a chart that Amanda is now showing you, the light output, the mean lumens. The 320 watt category fully encompasses the 350 watt category. That's looking at a graph of a lot of the products now on the market and using mean lumens from manufacturer catalogs.

So we believe for this exception we can increase the energy savings by capping it at 335 instead of 350. We picked 335 as roughly the midpoint between the current 320 watt lamps and the current 350 watt lamps. So that's our one recommendation.

A couple of other things I wanted to note. We do support the phase-out of the low wattage lamp compliance path as of 2014. The idea here is that electronics, the 90 or 92 percent
efficient ballasts that Gary talked about, are still going through additional development. They work pretty well but there are some outdoor and high temperature applications where they are not quite appropriate yet.

Based on our research we think it is highly, highly likely that they will be far along in 2014 and therefore it is appropriate to phase out those low wattage lamp compliance paths and just push everybody towards these electronic ballast or equivalent performers.

However, while we do support 2014 we are open to if in 2012 or 2013 they are not as far along as we are pretty confident they will be, to consider at that point delays in the effective date. But under the federal law, the law passed last year by the federal government, California has a one-time opportunity to not be preempted by federal standards. And that's a standard that they adopt as part of this rulemaking. This exemption from preemption expires the end of next year.

So by our reading, if California were to set a date, call it 2016 and then decided they can move it up, you would be preempted. However, if
you decide now it is 2014 and you say well, you
want to relax it, our interpretation is, and you
should check with your legal counsel as well. You
can delay something, it is not tightening it, it
is loosening it, and you shouldn't have a problem
with preemption but the reverse could be
problematical.

So we do support the 2014 date but
subject to, you know, come 2012 or 2013 how these
products are doing. We are quite confident that
they will be along to meet all applications but
recognize that there is some uncertainty and that
could be better addressed in the 2012, 2013 time
frame than trying to do it here and now.

Another thing I would note is that in
our very early case study we had recommended some
broader exemptions for some of the outdoor fixture
applications. That was before this low wattage
path, before these control paths were added. Now
that we have multiple compliance paths we don't
believe we no longer need an exemption for these
outdoor fixture types. We think with the low
wattage paths, with these control paths, all
applications can find an appropriate application.
Find an appropriate product to meet the
application.

So one other thing I point out is that this particular proposal involves just metal halide luminaires. The other major category, particularly in outdoor lighting, is high pressure sodium.

The PG&E team started to look at this as part of this case study, realized there were quite a few issues, not insurmountable but a number of new issues that are raised because we hadn't done as much work on high pressure sodium. And given the very quick pace of this rulemaking we decided to just concentrate on metal halide now. However, the PG&E's team intends to look at high pressure sodium next year and quite possibly recommend standards for the high pressure sodium fixtures.

The reason I mention it is I know there is some concern that if we ramp down this much on the metal halide fixtures some people may start using high pressure sodium, which are unregulated and might be cheaper. But it is certainly our intent long before 2014 when the compliance paths phase out to have a good proposal that hopefully you guys will consider and adopt. A good proposal for high pressure sodium lamps. We think that can
be done. And address concerns about, gee, will high pressure sodium sales grow.

So those were the different points I wanted to make. One, basically accept the current proposal. To reduce the wattage from 350 to 335 for the low wattage compliance path. Two, keep the 2014 effective date, update, for that low wattage lamp path. Three, continue to cover outdoor fixtures because of the low watt lamp and the control pathways. There are different pathways for all the different products to meet.

And I say be open to a high pressure sodium fixture standard that would be somewhat comparable to this that would basically improve both categories and allow them both to be efficient.

So that concludes the comments I wanted to make. Jennifer Thorne Amann on our staff is also on the phone, I believe, and Amanda is there. Jen and Amanda, do you have anything you want to add?

MS. STEVENS: No I don't.

PRESIDING MEMBER ROSENFIELD: Steve, this is Art Rosenfeld, I have a question.

MR. NADEL: Please.
PRESIDING MEMBER ROSENFELD: I guess I

don't understand what happens to the 350 and 400

watt lamps which you are showing us are not as

good in lumens per watt. What happens to that

whole line?

MR. NADEL: What happens to the line?

What would happen -- I mean, under the current

proposal if you wanted to use up -- you can't

really, you can't use a 400 watt lamp unless you

use a very high efficiency ballast, a 90 or 92

percent efficiency. Because you get the

efficiency improvements through the ballast.

An alternative path is to, under the

current proposal to allow either 320 or 350 watt

lamps to be used with a less-efficient ballast.

What we are recommending is that the

less efficient ballast option only be for 320 watt

lamps and not be for the 350. For the 350s you

have use the more efficient ballast.

PRESIDING MEMBER ROSENFELD: Thank you.

MR. NADEL: Does that --

PRESIDING MEMBER ROSENFELD: That's

quite clear, thank you.

MR. NADEL: Sure.

PRESIDING MEMBER ROSENFELD: Questions
or comments?

MR. FLAMM: So I believe at this time NEMA would like to make a presentation. Do you have a presentation or do you just want to make comments?

MS. ENGLISH: Just comments.

MR. FLAMM: Okay, NEMA is on the agenda to make comments.

MS. ENGLISH: Good afternoon, Cheryl English, Acuity Brands Lighting. I guess a couple of points to start with on some of the data that was just presented. Let's see here. Let me just start to my comments and we can get to the questions.

First off I just -- Great kudos to Gary Flamm through this process of herding the cats because he really has done a very good job of coordinating and collaborating with both sides of this issue.

I think to start out with it is helpful to talk about the history of this proposal for 2008 and where it started with the primary focus on electronic metal halide ballasts. The efficiencies associated with that are typically about four to six percent with mean lamp lumen
improvements you are talking about nine to ten percent savings. And understanding AB 1109 and the priorities there we stepped back and we said, let's really focus on where the energy savings are, and it is not on ballast efficiency.

(Whereupon, there was teleconference interference.)

ASSOCIATE MEMBER PFANNENSTIEL: Would you check with the operator and see what is going on with the phones.

MR. RIDER: It's feedback. They had the lines open, we'll close them now.

ASSOCIATE MEMBER PFANNENSTIEL: Thank you.

MS. ENGLISH: Okay, thank you. So the greater savings associated with metal halide would really be controlling the time of use. And so we stepped back and said, controls are really the answer to getting to the AB 1109 thresholds of those savings. What do we know that is tried, proven, cost-effective? And we came back with a proposal for regulating controls, integral controls into indoor HID products.

And I think that proposal was well-received. We believe that it is a solid proposal,
it has substantial energy savings. The intent was only integral controls for indoor, hi-bay and low-bay types of products. As we came back with a lot of variations and compromises on this I think the code language has really morphed into something that was never really intended.

We are here at 45-day language. We do need to come up with some agreeable language, we recognize that. But I would encourage us to step back and really make an assessment on whether or not what we have today is going to be effective. Is it going to save energy and is it going to be enforceable.

So some of the issues that we see in this currently are -- and I'll start with the electronic ballast issue. The $75 cost adder that is expressed there. We have commented previously that that is not an accurate end user cost. We had recommended that $100 is more representative. Quite honestly it is $100 to $125 depending on the characteristics that are required of that ballast.

But that is only for the component. What you have regulated is a metal halide luminaire. That component is not readily adaptable into existing luminaires because of the
thermal management associated with the electronics.

So in order to accommodate that thermal aspect for indoor luminaires the ballast housing has to be redesigned with fins to cool that ballast. Our engineering group has said that they believe that there's probably about a 30 percent incremental aspect of more material into that ballast housing.

If it is an outdoor luminaire the size of the housing has to be increased. The effective projected area in one case that we looked at went from 2.3 square feet to 3.3 square feet, which is a 50 percent increase in the material associated with that housing for that fixture. Then we've got --

PRESIDING MEMBER ROSENFELD: Is that all associated with more cooling, Cheryl?

MS. ENGLISH: Yes. Then, you know, with that additional area the pole sizing has to be larger. So you're talking about going from a four-inch steel pull to a five-inch steel pole. So you are adding 50 percent more material. The cost of that pole, incremental cost of that pole is about $800. So we are not talking about a $75
or $100 component adder because we are looking at
the end-use product here. So it is very
significant in terms of the cost.

The other technical issues associated
with power quality and reliability are very real.
Electronics are sensitive. And this is primarily
related to outdoor products. I think that we can
get improvements on indoor characteristics for
electronic ballasts.

But on outdoor with unregulated power
quality and surges there are going to be a lot of
issues in using electronics in those kinds of
applications. Can we add additional filters and
things to address that, yes, but then we are even
talking about a higher increment that really
addresses whether or not this is cost-effective.

The second area of this proposal related
to controls. Our proposal was integral controls
because we recognize Title 20 as being an
appliance standard. What is regulated is what is
sold in a box and sold to the field. And we felt
like that was reasonable. We did not intend for
it to be extended to outdoor products because the
best control strategy for outdoor is not integral
controls.
We have done test cases at Mondavi Center with outdoor lighting and controls. We hardly endorse the use of controls for outdoor lighting. But they tend to get application-specific and it is not a one-for-one match-up of a control unit, a sensor, to each luminaire. It has to do with the geometry of the site. There are obviously a lot of safety and security issues as you start dimming down outdoor lighting.

For indoor lighting the daylight controls when it is integral means that that sensor is close to the luminaire rather than close to the skylight or where the daylight is being measured. So the sensitivity of that control unit is compromised because it has to then filter out what it is seeing from the fixture versus what it is seeing from the daylight. It requires what is closed a closed-loop system where a control point would be communicating with other control points. And again, feasible. Not the most effective solution, not the most cost-effective solution.

Dimming also remains an issue with metal halide systems, both electronic and pulse-start types of systems. There are no industry solutions for dimming with horizontally-lamped luminaires.
and the majority of outdoor products do contain a horizontal lamp.

The data that was shown here on this graph that is up on the screen right now of the various lamps. We have some questions about that data. We are not aware of any commercially available 300 watt lamps. And that particular graph does not distinguish between burning positions, whether it is horizontal or vertical or universal burn.

This was an issue we brought up in 2005. We brought very specific data to show the gaps in the marketplace where there were not lamps available for the technology. And to be perfectly honest, there are still gaps today of lamps that are not available for certain wattages and certain burning positions. We have closed the gap a lot since 2005. But it was a code that was put together prematurely, assuming that the technology would be there.

With the lack of that technology what has happened in California is a lack of enforcement. There is no technology that can meet the 2005 standard, quite honestly. It has not been enforced. I don't think you are getting the
energy savings. So our goal here is really to
craft language that can be enforced, that can be
simple, so that we actually get those energy
savings.

With regard to the reduce lamp wattage
solution. We believe that this could potentially,
the sunset clause could inhibit the use of outdoor
controls. If this goes through forward as it is
today with the 2014 sunset, that is the viable
option for most of the outdoor solutions. If it
goes away what it means is that those outdoor
products are either going to use electronic
ballasts, which we believe is highly unlikely in
addressing the surge and thermal protection.

It then means that that product has to
be shipped with an integral control. Are those
solutions going to use those non-integral controls
when they have already had to buy a box that ships
with an integral control? No they are not. So
again the issue is primarily the outdoor lighting.

Integral controls for outdoor does not
make sense for a lot of applications. Sports
lighting, areas with security cameras where the
lights have to remain on for safety and security
purposes, visibility purposes. Parking garages,
street and roadway lighting. You know, those
areas are probably not likely to be the best
candidates for dimming solutions.

We do believe that there are some
applications such as parking lots where there's a
lot of potential for energy savings with controls
but it is not integral. It's non-integral
controls.

So where we are at today is that I think
through the proposed language virtually all of our
comments have been addressed. We do not support
the 2014 sunset. There is nothing to prove that
the technology is going to address these issues
for outdoor lighting with regard to the power
quality and surge protection.

We have no idea what the costs will be
associated with that and whether that is really
effective for the consumers of California. Plus
the current code is very complicated and I
seriously doubt whether it could ever be enforced
with the system that we have here today.

So we have exposed you to some technical
issues that we have concerns about. Going forward
we certainly want to be involved in a process that
is more rigorous in terms of validating the
technological feasibility, the cost-effectiveness
and the energy savings potential because we raised
a number of questions with regard to the original
PG&E case proposal.

The 2014 sunset is unacceptable and it
needs to be removed.

The case study, the PG&E case study
actually had suggested an exemption for outdoor
luminaires because of these technical issues we
raised but today there is still no exemption for
outdoor fixtures in the proposed code.

Recognizing the dilemma that we are here
with AB 1109 and the need to establish a
regulation, our recommendation would be to keep
indoor products, indoor metal halide products,
with the current proposal. So that it would allow
electronic ballasts, it would allow pulse-start
with controls, or it would allow pulse-start with
a reduced lamp wattage.

My personal opinion, we have not had a
chance to, you know, route Steve's proposal on
this 335 range so I can give you my company's
perspective. But I really don't seen any
significant issues with that. I don't know that
it is going to get you the energy savings because
it may force people down to a 320 watt lamp and
they will simply use more luminaires. So the
question is, really is it going to save energy.
But I think that we could certainly entertain that
among the rest of the NEMA members.

With regard to outdoor lighting our
recommendation would be to keep the 88 percent
ballast efficiency requirement that is in place
today and add a requirement that they have to use
these reduced lamp wattages. We would prefer to
not see any requirements related to controls for
outdoor in this Title 20 requirement because we
think that the control solutions are best handled
by application type. We would be more than
willing to work with you on Title 24 that works
specifically with applications to build in
requirements for lighting controls for outdoor
lighting.

And I think that's the extent of my
comments, thank you. Some of the other NEMA
members may choose to make comments.

MR. PENNINGTON: Could I ask a question?
PRESIDING MEMBER ROSENFIELD: Please,

Bill.

MR. PENNINGTON: Cheryl, could I ask you
a question. You said that you would recommend for outdoor, in addition to the 88 percent to require the use of the reduced wattages.

MS. ENGLISH: Right.

MR. PENNINGTON: What do you mean by require?

MS. ENGLISH: Those wattage ranges that are in there today, we would support that. If we need to go down to a 320 we could certainly entertain that.

MR. PENNINGTON: Okay. So you didn't mean to disallow 400s totally for outdoor and move to 335s as a required. I didn't understand what you meant by required.

MS. ENGLISH: That is what we are proposing, is that a 400 watt would no longer be a viable solution.

MR. PENNINGTON: Would not be allowed in California.

MS. ENGLISH: For outdoor lighting.

Today you have the 88 percent ballast efficiency. I will tell you, you are not getting the energy savings because the marketplace has not adopted the 2005 standard. So you have the 88 percent today. And we are saying, in addition to that the
lamp wattage ranges would have to comply with
those ranges that are in the proposed code in
order to get you the additional energy savings.
Those are lamp and ballast systems that exist
today.

MR. PENNINGTON: So we would have to
rewrite the proposal to disallow 400 watt lamps in
outdoor application.

PRESIDING MEMBER ROSENFELD: As a matter
of fact I think she said 400 and 350.

MS. ENGLISH: Right.

MR. PENNINGTON: So that's correct,
that's what you are saying.

MS. ENGLISH: Yes. And I think it is
actually -- You know, we didn't spend the time
here wordsmithing the proposed code language but I
don't know that it is that significant of a change
because it is in there today. We just need to
break out how indoor products are handled and how
outdoor products are handled.

On the enforcement issue. And I know
it's not part of an agenda today. But we would
very much like to sit down, maybe at CLTC with a
group, to really craft out what can we
collectively do with the Commission and with
industry to better educate. We have communicated
in our best efforts to the marketplace these
requirements.

There is, and I have mentioned this
previously. There is a perspective of who holds
the legal responsibility of compliance. The sales
channels through, you know, home centers,
showrooms, distributors, contractors believe that
they are not liable, that it is the manufacturer.
I am not a lawyer so I can't say exactly who is
responsible. But ultimately the marketplace has
not chosen to purchase those products and you are
not getting the energy savings.

If we focus on that we may be able to
back off some of these very, very restrictive
regulatory processes and actually get the energy
savings that you really want. I don't think it is
about the regulation, it is about saving the
energy.

ADVISOR TUTT: Cheryl, can I ask you a
question?

MS. ENGLISH: Yes.

ADVISOR TUTT: As I understand, you did
propose early on in this process back and forth
that a controls option would be a good policy to
consider.

MS. ENGLISH: Yes.

ADVISOR TUTT: So in a situation -- And I know you were talking indoor lighting.

MS. ENGLISH: Yes.

ADVISOR TUTT: In a situation where you have an indoor luminaire that burns out, what would the controls option be? One luminaire in an installation in a large store, for example.

MS. ENGLISH: It would be replaced -- Chances are if it burns out they are going to go in and replace a ballast or a capacitor or whatever actually failed. They are typically not going to replace the entire luminaire if it is a maintenance type of issue. But if they chose to replace that luminaire they would be replacing it with a fixture that has an integral control. And it means that if the area was unoccupied that one luminaire would go out. It would not control the rest of the luminaires in that space.

ADVISOR TUTT: In the standards proposal we have in front of us. But was that what you were proposing when you proposed a controls option for this?

MS. ENGLISH: Well, the focus of what
the real impact is on new construction and major renovations.

ADVISOR TUTT: A Title 24 focus, right?

MS. ENGLISH: Well not necessarily. This Title 20 covers new construction and major renovation as well because the products have to comply with Title 20 as well as with Title 24.

ADVISOR TUTT: Right.

MS. ENGLISH: So this is where this blending is getting very clumsy between Title 24 and Title 20 and we are getting close to having dual standards. We are finding things in Title 20 that are application-based. We are finding things in Title 24 that are product-based. I think we need to think very carefully as we move forward of what goes where. How do we manage applications versus products, or widgets if you will.

But what you have described is if one burns out, they would replace that with a fixture that has an integral control and it would turn off only that fixture.

ADVISOR TUTT: Right, in the current proposal.

MS. ENGLISH: I would love to find a way that, you know -- Gary Fernstrom and I this
morning were talking about, are there some opportunities to really get after the existing building stock. Because that is where a lot of the energy savings -- If we could go into warehouses and really turn those to more energy efficient solutions it would make a lot of sense.

PRESIDING MEMBER ROSENFELD: Right.

MS. ENGLISH: We have some ideas outside the scope of the meeting here. But I, I would like to get some of our collaborative meetings maybe back on to a quarterly schedule so that we can share some of these ideas and actually make them happen.

ADVISOR TUTT: Thank you.

MS. ENGLISH: Thank you.

PRESIDING MEMBER ROSENFELD: Are there other public comments? NEMA?

Gary, I guess you are up.

MR. FLAMM: You have comments? There are some comments, Commissioner.

PRESIDING MEMBER ROSENFELD: Please come up.

MR. GREEN: I'm John Green. I'm with Cooper Lighting. I'd like to comment on the outdoor application of electronic ballasts.
I know the Commission has heard testimony before about the dangers and the problems that might occur with the application of electronic ballasts outdoors. I would just like to reinforce that with a couple of personal comments.

For magnetic ballasts, and this has been in effect for quite a while, there has been a measurement called the BIL, which is a basic insulation measurement of how well ballasts can withstand transience in the field. And for magnetics it has been required, especially by utilities, to have a 7.5 to 10,000 volt impulse level that they have to withstand. This is typical for outdoor.

PRESIDING MEMBER ROSENFELD: Could you say it again. Basic insulation level?

MR. GREEN: Yes. And this point I know of no electronic ballasts that carry this rating. And I think that speaks very well to the ability of these ballasts to not at this point be able to withstand a lot of these outdoor applications.

The other comment I would like to contribute is that I do a lot of field service work for a lighting company. And we have --
Within the past few months I have been involved with at least two jobs with the application of electronic HID ballasts in parking garages. These are technically outdoor applications but they are really on the low end of what they might see in transient voltage exposure. And we have had up to 80 percent failure rates with electronic ballasts in these applications.

It is very expensive to replace ballasts and bring these facilities back on-line, especially when you are faced with safety issues in parking garages. I'm sure everyone is aware of how that can go in a legal environment. And at this point there are no good solutions for these types of problems. And I just know when these things get further out into other applications such as street lighting and parking lot areas that the exposure to these transients is going to be much higher than what we have seen in these parking garages.

That's just some real-life exposure to the application issues that can come up with electronic ballasts.

PRESIDING MEMBER ROSENFELD: These are all comments about outdoor lighting?
MR. GREEN: Yes, this is all outdoor.

An application of electronic ballasts outdoors.

PRESIDING MEMBER ROSENFELD: Can you explain to me why you get more surges in outdoor lighting, in parking garages and so on, than you get in a building.

MR. GREEN: Well most of it is related --

PRESIDING MEMBER ROSENFELD: I don't know where the surges come from except I know they exist.

MR. GREEN: Well obviously lightning is an issue. And in terms of buildings you have filtering that occurs on the power line as it comes into a building. The building itself actually shields a lot of the electrical potential you might get from a lightning strike.

However, you look at street lighting, area lights where we have a pole standing out in the middle of an open field or out on a roadway. The lightning strike doesn't actually have to hit one of the poles, it can hit the ground beside it. And all that voltage is induced into the system with no ways to really filter it out. In buildings where there's huge numbers of
concentrated fixtures and protection from the
building itself you don't see that.

Parking garages are kind of in-between.
They can get lightning strikes close by, they can
get other large -- large motors, say, starting in
some of these facilities. It is that the indoors
is filtered much better and the exposure just
isn't there. But the basic impulse level, the
BIL, was developed just for that reason. That the
outdoor obviously sees these issues a lot more
than the indoor fixture do.

ADVISOR TUTT: So you said that there is
no outdoor luminaire with these ratings today.

MR. GREEN: I have worked on electronic
HID ballasts since 1975.

ADVISOR TUTT: And you haven't seen one.

MR. GREEN: And I haven't seen one yet.

ADVISOR TUTT: But is someone working on
trying to get a rating like this?

MR. GREEN: Well there's a lot -- The
filtering has improved a lot in the 33 years that
I have been exposed to this but they are mostly
for indoor. The transient levels are just from
minor disturbances that come down. They really
put them in the same category as communications
equipment. I'm trying to think of some other
ones. TV sets is not really a good one but a lot
of the consumer electronics do have filters as
well. So the electronic ballasts are probably on
a par with those right now. They are not made for
sitting out in a field exposed to the elements,
these transients.

ADVISOR TUTT: I guess I had understood
that the industry in general was moving towards
electronic ballasts. Are you saying that they are
probably not going to do that for outdoor?

MR. GREEN: Well, it has always been
under consideration. There is just no cost-
effective way to put filters on each one of these
ballasts and give it the protection that we can
see with indoor luminaires. Because on an indoor
luminaire you can have a filter at the
distribution -- at the entrance point to the
building before it gets into the distribution
system. And those are, those are pretty common.

But you have a string of street lights
down the road, there's just no way to protect
that. You have to put a filter on each one of the
ballasts. And these could cost, you know, $100,
$200 apiece for these filters. And they are
available and it could be done but surely no one
wants to pay for them.

MR. PENNINGTON: I have a question. I
understood you to say that some utilities require
a threshold on this BIL measurement; is that
correct?

MR. GREEN: Yes.

MR. PENNINGTON: Do you California
utilities require that?

MR. GREEN: I can't answer that. I'm
pretty sure they do.

MR. PENNINGTON: Is that a question you
could answer with some evidence?

MR. GREEN: Yes, yes I could.

PRESIDING MEMBER ROSENFIELD: Bill, I'm
sorry, I was taking notes. You said some
utilities do what? I apologize?

MR. PENNINGTON: He said that an issue
is that some utilities have a threshold on this
BIL measurement. And I was wondering --

PRESIDING MEMBER ROSENFIELD: It's got to
be better than something or other.

MR. PENNINGTON: Excuse me?

PRESIDING MEMBER ROSENFIELD: It's got to
be better than something or other.
MR. PENNINGTON: Right. And so I was wondering if the California utilities impose that.

MR. FERNSTROM: Bill, this is Gary. If California utilities did it would be for street lighting products that they buy. I think it is unlikely that the utility would require that a product purchased by a customer for use in their distribution meet a BIL requirement.

MR. PENNINGTON: Do you agree with that, sir?

MR. GREEN: Well that may be true but the point was that these requirements are imposed on outdoor products. The utility has developed this because they understand the transient issues in the field. Whether another customer demands that or not is another question. It doesn't say that the ballast doesn't need it or that there won't be failures because of that. But the utilities have a bigger stake in this because of the number of luminaires that they place in street applications.

MR. PENNINGTON: Well perhaps the street lights are the most vulnerable as well.

MR. GREEN: They probably are, you are probably correct, yes.
MR. FERNSTROM: I agree. The utilities in Florida, for example, are probably very concerned about lightning strikes.

MR. GREEN: The cost of repairing a situation where a transient comes in is extremely high. I'm not sure that has been factored into the consideration.

PRESIDING MEMBER ROSENFELD: So Mr. Green, what would you actually recommend to us to do about electronic ballasts outdoors?

MR. GREEN: I don't think there is a solution right now. And as I say, it has been a lot of years that I have worked on these. And seeing what has developed over the years I don't see a cost effective solution at the moment for the majority of the outdoor applications.

I read the PG&E case report and they at that point had suggested that outdoor be exempted from that. And I can understand the reason and I agree with it.

PRESIDING MEMBER ROSENFELD: Thank you, that is very attention-grabbing.

MR. GREEN: Thank you very much.

MS. STEVENS: Hi, my name is Amanda Stevens. I am with Energy Solutions here on
behalf of PG&E. I just wanted to follow-up on one comment. I guess we are a little bit surprised by the pretty bleak prognosis given for outdoor applications. I would just like to highlight. I guess we are a little confused. We see NEMA, in comments to the CEC that were dated May 29 they wrote, and I quote:

"There has been significant progress in the development of electronic ballasts for specific applications. However, a full line of high efficiency electronic ballasts with proven reliability that will support all applications is not anticipated until around 2015."

So I think with the current proposal we have that offers three different compliance options beginning in 2010 and two different compliance options in 2014, it dovetails well with the expectation that electronic ballasts will be available in all applications by around 2015. I just wanted to add that, thank you.

PRESIDING MEMBER ROSENFELD: Thank you.

MR. FLAMM: Cheryl would like to make
another comment.

PRESIDING MEMBER ROSENFELD: Cheryl,

welcome.

MS. ENGLISH: Cheryl English, Acuity
Brands Lighting.

I did want to follow up on a couple of things. On Gary's slides he talked about the federal metal halide regulation and that it allows some probe-start lamps. I think it actually meant to be ballasts on that. And some probe-start ballasts. It actually does not. We did not want to have a ban.

I am going to defer to somebody else because I am going to start coughing. I'll be back.

PRESIDING MEMBER ROSENFELD: Do you want to go on temporarily while Cheryl --

MR. FLAMM: Would you like me to move on to the next topic?

PRESIDING MEMBER ROSENFELD: And we will welcome Cheryl when she comes back.

ADVISOR TUTT: I believe that is what she was asking for.

PRESIDING MEMBER ROSENFELD: Yes, all right.

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MR. FLAMM: Okay. So I have a -- I'll just move on. When she comes back we can have her jump in again.

PRESIDING MEMBER ROSENFELD: Sure.

MR. FLAMM: To frame the portable luminaire regulation proposal I want to really quick go over a little presentation on GU-24 because it kind of frames both something that's proposed for the general service incandescent lamps and for portable luminaires.

The GU-24, there are some pictures at the bottom here, is a 120 volt or line voltage pin twist socket that was developed by the lighting industry. And it was developed, it was intended for only high-efficacy light sources when it was developed, like compact fluorescents and LEDs.

There are people in the lighting industry who anticipate that the GU-24 is eventually going to replace the Edison screw-base for CFLs and LEDs.

Cheryl, I was going to go through this and then you can jump up, okay.

The GU-24 products are relatively new in the market and as such there has not been significant demand for introducing low-efficacy
LED products because there's not many luminaires with GU-24 bases in them. However, there are no regulations against doing that.

There are a number of efforts going on nationally, but as of this moment there are no regulations to keep manufacturers from making low efficacy products that are drop-in replacements for the luminaires that were intended to be only high efficacy.

So the GU-24 proposed regulations in Title 20, they apply to general service incandescent lamps, portable luminaires, permanent luminaires and GU-24 adaptors. What the standards regulations say is that incandescent lamps shall not contain a GU-24 base. And the reason is, if we have regulations that allow compliance through a GU-24 socket, we don't want the market all of a sudden to come out with incandescent lamps that fit into those luminaires that were designed or intended only for high efficacy sources.

The regulations also say permanently installed and portable luminaires with GU-24 sockets basically shall be rated for use, shall not be rated for use with incandescent lamps of any type.
And GU-24 adaptors. And there is a picture of a GU-24 adaptor on the bottom right of this slide. Which somebody came to the market with as an effort to undermine the energy efficiency efforts that are going on across the nation with the GU-24 socket arrangement.

What the regulations say is that GU-24 adaptors shall not convert a GU-24 socket to any other line voltage socket. So those are different proposed regulations that are in several portions of the Title 20 regulations. And that's all I have on that.

PRESIDING MEMBER ROSENFELD: Is this already draft regulation, Gary?

MR. FLAMM: I'm sorry, I didn't understand the question.

PRESIDING MEMBER ROSENFELD: This is in the staff committee report?

MR. FLAMM: This is in the staff report, yes.

PRESIDING MEMBER ROSENFELD: You were just explaining the reasoning behind it.

MR. FLAMM: I just explained it because there has been some confusion. We actually have three elements in the regulations in different
places in the Express Terms. In one place it says that incandescent lamps shall not have a GU-24 base. In another place it says that you can't have adaptors to change a GU-24 luminaire to something else. And, luminaires shall not be rated for incandescent lamps if they have a GU-24 socket. And also in the portable luminaire regulations we say, one of the compliance paths is to have a portable luminaire with a GU-24 socket. So to kind of pull that all together because it has been so confusing we broke it out in the staff report and I broke it out as a separate presentation here.

PRESIDING MEMBER ROSENFELD: And one of the things it does is to forbid that adaptor, which you have down there.

MR. FLAMM: That is correct.

PRESIDING MEMBER ROSENFELD: Good.

Thank you for that mini-presentation.

MR. FLAMM: You're welcome. Do you want to invite Cheryl back up right now?

PRESIDING MEMBER ROSENFELD: Yes, I am going to invite Cheryl back.

MS. ENGLISH: Sorry for the interruption. I have my water now.
So on the federal metal halide luminaire requirements there seems to be a perception that it allows probe-start ballasts. Generally when we look at regulations we don't like to ban a technology because it may limit future development. So there is a category put in there for probe-start ballasts that have to be 94 percent efficient. If and in the event that someone chose to invest some R&D and could achieve that, that it wouldn't ban future technologies. There are no probe-start ballasts today that meet that requirement so the federal requirement essentially does ban probe-start technology.

With regard to Steve Nadel's suggestion of, let's wait and see and we can waive the 2014 requirement when we get there. We'll know more about what the technology development is. I find that very problematic and I again would suggest that we remove the sunset clause.

DOE will be under direction to upgrade the federal requirements. And if the technology at the next DOE rulemaking suggests that those electronics do make sense then we would be proposing higher efficiencies for the DOE federal requirements.
This wait and see on a piece of legislation and regulation I find to be very problematic because we can't plan our businesses around knowing whether or not this is a requirement or not. And our investments in our technologies are typically two to three years in advance.

With regard to the NEMA comments that were submitted. We do believe that there are going to be a lot of advances in the electronic technologies. Our comments I believe were taken out of context because we do not know whether or not these issues related to the outdoor lighting with the power quality and thermal management will be addressed by those dates. We do know that there will be a lot more options by those dates. And we don't know what the cost-effectiveness of that is going to be.

So we are all sitting here today suggesting information that we have no data on. And I believe it is a requirement of the California Energy Commission to write regulations that have proven energy savings, are proven to be cost-effective and technologically feasible.

There's two aspects of that, actually
three aspects, because we don't even know what the energy savings potential will be on stuff that doesn't exist. We clearly cannot project the costs. And we don't know whether or not it will be technologically feasible. So again, I think the 2014 sunset does need to be removed. Thank you.

PRESIDING MEMBER ROSENFELD: Does that conclude metal halides?

ADVISOR TUTT: You might ask if there's any other comments.

PRESIDING MEMBER ROSENFELD: I guess not. I guess we are ready to go on. Portable luminaires.

MR. FLAMM: Okay, we'll move on to portable luminaires. The Energy Commission received two initial proposals. One proposal from PG&E and later a proposal from the American Lighting Association. The Energy Commission had a proposal in the Preliminary Staff Report that we presented on May 15.

The PG&E proposal initially evaluated the idea of recommending compact fluorescents be prepackaged for sale with screw-based luminaires and they dropped that. They recommended in their
original study to drop that. And the American Lighting Association asked that this option be reconsidered.

In the American Lighting Association proposal they proposed to regulate only 20 percent of the most popular styles that they suggested would influence 80 percent of the sales. We had a number of discussions and it was determined that there's no way that that could be applied. There is no way to administer such a regulation.

So the Energy Commission proposed melding a few of the initial proposals and worked together with the different stakeholders. And we included the limitation on the maximum wattage of the portable luminaire. The American Lighting Association argued that that limitation was not technically feasible.

So we basically went back to the drawing board at that point with the stakeholders. And we actually came out with a very good proposal that it is my understanding that all the stakeholders support. And there are five compliance options that we are proposing that's supported by all of the stakeholders. And there's two exceptions to those, to the proposals. And there's a
requirement for reporting the sales data that has been added.

so the five proposals, the five options for complying with portable luminaires:

Number one is that it is equipped with a dedicated fluorescent lamp socket. That would mean it is a pin-based socket with an integral ballast in the luminaire.

The second would be it is an LED luminaire or a portable luminaire using LED lighting, including the power supply. This does not mean an LED light bulb. It means an LED driver of some kind, a light engine.

The third option is it is equipped with a GU-24 socket that can only support high-efficacy lamps. And that is why I went over that GU-24 presentation.

The fourth option, which was proposed by ALA and initially considered by PG&E, was prepackaged and sold with high-efficacy compact fluorescents. The type of fluorescent would be based on the 2008 Energy Star efficiency levels. Or they could be packaged with high-efficiency LED lamps or LED light bulbs.

And the fifth option is it is equipped
with a single-ended, non-screw-based halogen lamp, either line voltage or low voltage, and it includes a dimmer or a high/low control, and shall be rated for a maximum of 100 watts. So those are the five options.

ALA had requested two exemptions to the prepackaging of compact fluorescents with the portable luminaire. Portable wall-mounted luminaires that meet a list of specified requirements. And art work luminaires that meet a list of specified requirements.

And then the additional requirements are that portable luminaires that have internal power supplies shall have zero standby loss when the luminaire is turned off. And finally, beginning in January 2013, manufacturers selling products in California for non-screw-based halogen luminaires shall report that sales data to the Energy Commission.

So the estimated energy cost is $2.50 a luminaire. That is based upon a prepackaged compact fluorescent lamp. Which reduced the cost over the design life of $26.99. And the current annual statewide energy use for portable luminaires is 3,063 million kilowatt hours as of
2008.

And that is the end of my presentation.

So I believe that PG&E is going to, the PG&E team is going to make a presentation.

PRESIDING MEMBER ROSENFIELD: Gary, while you are finding that. I just realized I don't visualize this. In your next to the last slide you said, portable wall-mount adjustable luminaires. What is a portable wall-mounted adjustable luminaire? I can't visualize it. I just said that, I guess.

MR. FLAMM: There are luminaires that the American Lighting Association was concerned with. These are luminaires that they characterize as typically being put in a bedroom. They are hung on a wall. They have some kind of an articulated arm that they come off of the wall. Typically have a dimmer in them.

So they requested that that be exempt because of the security needs. They were concerned that a compact fluorescent, even if they were prepackaged with a dimmable compact fluorescent, that someone in the future may put the wrong kind of lamp into that. A non-dimmable compact fluorescent into that luminaire.
So they had some safety concerns and they requested that that luminaire, which is very specifically defined. There's probably about ten elements that it has to meet before it qualifies as being that wall-mounted luminaire. Is that enough explanation?

PRESIDING MEMBER ROSENFIELD: No, that's fine.

MR. FLAMM: Okay.

MS. STEVENS: Thank you. Good afternoon, my name is Amanda Stevens. I am here on behalf of PG&E. And I would like to thank everyone here for having us give our points on portable fixtures. So the PG&E team, the CEC staff and the ALA have had conference calls since the May workshop and we feel that these have led to some very constructive discussions.

In general PG&E supports the 45-day language for portable luminaires. As Gary mentioned, the proposed rule provides flexibility through five different compliance options and will also result in significant energy savings beyond those which will be captured through the general service lighting standard and the proposed acceleration of the federal general service
lighting standard in California. The estimated energy savings from this proposal is between 41 and 62 gigawatt hours and four to six megawatts in the first year of sales.

So as I said, we are in general agreement with the 45-day language. My comments today are going to be pretty brief and they are going to focus on three specific issues. First, the proposed exemption for the wall-mounted luminaires that was just discussed. The second being the Energy Star requirement language for CFLs. And the third being some minor points about the LED lamp definition.

So regarding the wall-mounted luminaires. We stated during discussions with ALA leading up to the 45-day language that we didn't believe these particular products warranted an exemption. Although I would like to add that we do think the proposed definition is pretty tight so we don't see any real possibility for a loophole there. But I would like to take just a few minutes to walk through some of our reasoning as to why we think these don't really warrant an exemption.

So one of the rationales that was given
at first was that they should be exempted because they were a low volume product. Most of the people were probably at the May workshop, but the long-tail distribution was discussed at length during this workshop. The ship-with-CFL option or packaged-with-CFL was originally proposed by the ALA as a way to accommodate these low volume products in the long-tail distribution. So we question the rationale for exempting a subset of fixtures which would now be exempted on these grounds.

And then the second point being that even packaging dimmable CFLs, as most of these fixtures are typically dimmable, even assuming the CFL costs $10 to $15, it will still have a three to four year simple payback.

So finally the last point I would like to make here is that the original intent of the proposal was to provide an overall cost effective option while still providing consumers with enough flexibility to meet their lighting needs.

So we have heard there may be some concerns because the dimmable CFLs available today don't meet the same range of dimming precisions as CFLs. However, we expect CFLs in most cases will
be able to meet this need, and in other cases we propose that an additional compliance option would be to use LEDs, either as a primary or secondary light source to provide these very low levels of dimming in these fixtures.

So I'll move on to the second point we would like to make. The proposed regulation requires CFLs shipped with a portable fixture to meet the minimum energy efficiency requirements established for 2008 by Energy Star. On December 2 of this year a new Energy Star specification, Version 4.0, goes into effect.

We would like to suggest that to avoid any ambiguity which may arise that the specific Version 4.0 should be referenced. And I understand there may be some legal issues here but we would like to recommend that Version 4.0 be specifically referenced so there is no ambiguity.

And just to show, there are different minimum efficiency requirements right now from the one that is currently in effect, 3.0, and the one that goes into effect in December, which is Version 4.0. And there's also several new categories in the new Energy Star specs. So just to highlight that there is a difference.
And then the last point I am going to make is more of a minor point. But we noted that with the compliance option that allows fixtures to be shipped with either a CFL or an LED lamp, we noted that the term LED lamp has not yet been defined. We suggest that this may be a definition that could be added to avoid any potential ambiguity.

And then on a related note. We noted that it may be just a typographical mistake but page eight of the Express Terms mentions an LED Source and we think the intended phrase may be LED Light Source.

So that concludes my comments. Thank you very much.

PRESIDING MEMBER ROSENFELD: Thank you. Any comments? Yes, you are coming up.

MR. POPE: Thank you. Ted Pope with Energy Solutions for PG&E.

Gary, I just want to clarify. I think I heard you say a primary argument for the exemption for the wall-mounted fixtures was because non-dimming lamps may be installed in fixtures. Is that what you meant to say? Because I feel like that is pretty much the same issue for all.
MR. FLAMM: Yes, I believe that was, that was one of the arguments. One of the arguments that resonated with me was that if they sold the lamp -- they are typically dimmable. The ALA information was that they are typically dimmable so they would have to sell that with a dimmable compact fluorescent. And they are used in bedrooms and around the crib and, you know, a more intimate setting. And if the consumer replaced that dimmable compact fluorescent with a non-dimmable compact fluorescent in their ignorance, that it could be a hazard, it could be a safety hazard. So that was one of the arguments.

MR. POPE: Thanks for clarifying that.

MR. LINSTONE: I am Clark Linstone. I am the Chief Financial Officer of Lamps Plus, which is the largest independent lighting chain in California and the United States. I am also here as Chairman of the Government Affairs Committee of the American Lighting Association and a member of its Board of Governors and I am formally representing ALA at this hearing.

Our President, Dick Upton, who was able to attend last time is still Washington DC where
we are concluding our annual conference. So he
wanted me to apologize for his not being available
today.

First of all I would like to express our
appreciation to everybody involved in this
process, PG&E, Energy Solutions, the CEC.
Particularly Gary Flamm in orchestrating all our
conversations since our last discussion of this,
of this topic. After several months of work and
many phone calls, conference calls, which Amanda
alluded to, we feel very comfortable with the
final proposal as it is presented, which includes
five options that Gary went through.

We believe that the inclusion of the CFL
prepackaged with the lamp will substantially
achieve not only the goals set in terms of new
product, but also by introducing the bulbs to the
household that they will use similar CFLs in other
products around the house. So we think actually
there will be a almost multiplier effect as a
result of providing the lamp with the product.

In terms of the exemptions, which I know
we have had some discussion of and I will touch on
briefly. Specifically this adjustable swing-arm,
wall-mount portable. Which on the surface may
seem like it doesn't make sense, a wall-mount portable lamp. By UL definition a portable lamp is anything that has a plug on it. So while it is affixed to the wall it is actually plugged into an outlet, hence falling under the portable luminaire definition.

Typically where this product is used is for almost like background light. I'll give you an example. Perhaps in a children's room. It might serve as a night light. It's a very -- So typically this product, as was indicated, has a dimmer. It usually needs to function at very low levels if it is to fulfill that function.

And one of the concerns that the American Lighting Association had was that as far as we know today, we do not have the ability to dim as far down a dimmable fluorescent as is probably required by the product today. We are concerned in general about replacement. The fact that this would be on the wall.

The other exemption. One of the things that was mentioned also was using LED. Because this is general area light, in terms of the way we see it typically used, we don't see the LED option as being very workable for this particular
The other exemption in terms of artwork.

In talking with the people -- and what we are talking about here is similar to the wall luminaire. It is a picture light which is plugged into an outlet. And their concerns were in terms of using CFLs, was the effect of UV light on the actual artwork. It's a very specific product.

And in terms of actually finding product that would serve its basic function today, we don't know of any that exists that would be able to both take a compact fluorescent and also not produce any negative effects to the artwork.

So that's why in our discussions with the staff and in our conference calls we thought these two exemptions were appropriate. But all in all we are very positive in terms of the whole process and support the recommendations put forth by the CEC staff.

PRESIDING MEMBER ROSENFIELD: That makes a lot of sense. I think I wasn't listening to your last sentence. I thought the exemption for the artwork was because of the focusing properties. Are you saying that CFLs put out more ultraviolet than --
MR. LINSTONE: I should say, for the focusing in terms of how the light --

PRESIDING MEMBER ROSENFELD: Right.

MR. LINSTONE: It doesn't focus, the CFL. That's a point that I should have included. But also in talking with at least the people we were talking to in terms of picture light. That there is more UV that would affect the artwork.

PRESIDING MEMBER ROSENFELD: From a CFL.

MR. LINSTONE: From a CFL, yes.

PRESIDING MEMBER ROSENFELD: I didn't know that. Okay, thank you.

MR. LINSTONE: Thank you.

PRESIDING MEMBER ROSENFELD: Ted, you are looking, hovering.

MR. POPE: I apologize. Ted Pope, Energy Solutions for PG&E. I just had a e-mail from Steve Nadel. And maybe it's too far out of order but he has been trying to respond on the metal halide issues that came up and apparently wasn't able to get through.

MR. RIDER: The operator hasn't said anything but I can --

MR. POPE: I don't know. Is it...
possible?

PRESIDING MEMBER ROSENFIELD: Sure.

MR. POPE: He was about to leave in five minutes, if he hasn't left. If he is still here maybe he has something he wants to say. If not, I apologize.

MR. RIDER: He is not on the line.

MR. POPE: Sorry, I guess we missed him.

PRESIDING MEMBER ROSENFIELD: You can't get Nadel?

MR. RIDER: What's that?

PRESIDING MEMBER ROSENFIELD: You can't get Nadel?

MR. RIDER: He is not on the line any longer.

PRESIDING MEMBER ROSENFIELD: Okay. Well, that seems to bring us to miscellaneous public comment.

Gary, as far as you are concerned we are through with portables.

MR. FLAMM: We are done with this, yes. Is that what you asked?

PRESIDING MEMBER ROSENFIELD: Yes.

MR. FLAMM: Yes, we are done with that.

PRESIDING MEMBER ROSENFIELD: Any general
public comment?

No miscellaneous public out there.

Well staff, Bill Pennington, any wrap-up?

MR. PENNINGTON: Is Melinda here to wrap up?

MS. MERRITT: I'm here.

MR. PENNINGTON: Okay, good.

PRESIDING MEMBER ROSENFELD: Melinda.

MR. PENNINGTON: She was invisible to me.

MS. MERRITT: I just checked, there are no more blue cards so I am assuming that there is no more public comment either on the proposed amendments to the regulations or on the Draft Environmental Impact Report. So that closes our public meeting.

I would just remind individuals of the end dates for the 45-day review period for the amendments to the regulations is October 13. The end date for comments on the Draft Environmental Impact Report is October 6. And we look forward to your cards and letters.

MR. PENNINGTON: I might just say that we always appreciate early submittals on comments.
That enables staff not to have just a big down
time here waiting for the comments.

PRESIDING MEMBER ROSENFELD: Yes, the
ever earlier the better. The earlier and briefer and
more explicit the better.

Commissioner Pfannenstiel has some
parting comment.

MR. PENNINGTON: Yes, it is in fact a
parting comment. I want to thank all of the
parties who have been working so hard on this. I
think there's been a lot of cooperation, a lot of
collaboration, and I know that we have whittled
down the areas of disagreement in the last few
months. And that was from a lot of -- I know the
staff, Gary and others on the staff have worked
really hard on this and I think very effectively.

So to the extent we can keep working
that way and whittling down the differences among
us. It is incredibly helpful to us when we have
to ultimately make the decision to have the
benefit of everybody working together as a team.
So thank you for that.

PRESIDING MEMBER ROSENFELD: And I was
happy to hear Cheryl say that we need more
meetings at the Lighting Center where we all get

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together and share one another's point of view.
But that whittling process seems to work very
well. Which reminds me, Mike Siminovitch, before
everybody else disappears, we were going to talk.

So I guess that's it, thank you. We are
getting through a little early, that's good.

Thanks very much.

(Whereupon, at 2:53 p.m., the Public
Hearing was adjourned.)

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CERTIFICATE OF REPORTER

I, RAMONA COTA, an Electronic Reporter,
do hereby certify that I am a disinterested person
herein; that I recorded the foregoing California
Energy Committee Public Hearing; that it was
thereafter transcribed into typewriting.

I further certify that I am not of
counsel or attorney for any of the parties to said
workshop, nor in any way interested in outcome of
said workshop.

IN WITNESS WHEREOF, I have hereunto set
my hand this 29th day of September, 2008.

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