

COMMITTEE WORKSHOP
BEFORE THE
CALIFORNIA ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:)
) Docket No.
APPLIANCE EFFICIENCY REGULATIONS) 03-AAER-1
_____)

CALIFORNIA ENERGY COMMISSION
HEARING ROOM A
1516 NINTH STREET
SACRAMENTO, CALIFORNIA

THURSDAY, MAY 27, 2004

10:12 A.M.

Reported by:
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PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

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Bill Pennington

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P R O C E E D I N G S

10:12 a.m.

ASSOCIATE MEMBER ROSENFELD: Good morning, everybody. Welcome to the appliance festival.

(Laughter.)

ASSOCIATE MEMBER ROSENFELD: I'm speaking on behalf of two Commissioners. We have a brand new Commissioner, Jackie Pfannenstiel, who has agreed to be the Chairman of the Energy Efficiency Committee. But she's so new she didn't even have today written down in her diary. So I'm the number two on the Energy Efficiency Committee and looking forward to I hope like a day and a half of stimulating discussions.

I'm not going to say anything except welcome, and introduce the eternally hard working staff, except to propose selfishly that since I have a conference call from 12:00 to 1:00 that we make lunch break 12:00 to 1:00.

And, Michael, what time are we supposed to end today?

MR. MARTIN: The notice doesn't indicate an ending time.

ASSOCIATE MEMBER ROSENFELD: We're vague

1 on that, okay. We'll be suitably vague.

2 MR. MARTIN: We'll just get as much
3 through as we possibly can. And as far as I'm
4 concerned, if people want to go later than we
5 normally go, so as not to have to come back
6 tomorrow, I would be quite sympathetic about it.
7 I'm not sure about you.

8 ASSOCIATE MEMBER ROSENFELD: If we rush
9 we can try to get through in a day. Okay.

10 MR. MARTIN: Well, we do have some items
11 that --

12 ASSOCIATE MEMBER ROSENFELD: We have two
13 -- we have some required stuff tomorrow.

14 MR. MARTIN: -- are committed for
15 tomorrow.

16 ASSOCIATE MEMBER ROSENFELD: Right, but
17 we might be able to do it tomorrow morning. Okay,
18 so I'm not going to do anything else except sip
19 coffee and introduce Jonathan Blee, who is going
20 to be our impresario, gatekeeper, timekeeper; and
21 Michael Martin. And I don't see Bill Pennington
22 yet, but we'll introduce him when he comes in.

23 So, Jonathan.

24 MR. BLEES: Thank you, Commissioner
25 Rosenfeld. And good morning and welcome. I hope

1 that everybody has a document that is available
2 out on the front table, looks like this. Notes
3 for staff presentation at appliance workshop.

4 The first page contains an agenda. The
5 table there lists various groupings of appliances
6 in the order from the top down that we intend to
7 take them up today and tomorrow. This order is
8 based to some extent on the needs of people who
9 can be here only one day. And also on our
10 estimate on the time it's going to take for those
11 appliance groups that we think will take
12 comparatively less time. We're scheduling those
13 first so that those people don't have to wait
14 around through long discussions of appliances that
15 are not relevant to them.

16 What we intend to do, as you can see
17 from the agenda, is to have Mr. Martin give a
18 brief overview of the process. Then the staff
19 will give a brief introduction of its analysis and
20 recommendations for each of the appliance groups.
21 And then we'll take public comment.

22 I know that some of you have already
23 submitted written comments, for which we thank
24 you. It is not necessary today to repeat those in
25 detail.

1 Are there any questions so far?

2 Mr. Martin.

3 MR. MARTIN: Thank you, Jonathan.

4 Section 25402(c) of the Public Resources Code has
5 for many years required the Energy Commission to
6 adopt standards for energy efficiency of
7 appliances whose use, as determined by the
8 Commission, requires a significant amount of
9 energy on a statewide basis.

10 A new and upgraded standards must be
11 feasible and attainable and must not result in any
12 added total cost to the consumer over the designed
13 life of the appliance. The added total costs
14 obtained by comparing the cost and performance of
15 a typical model that a consumer would be expected
16 to purchase with a proposed upgraded or new
17 standard in effect with the cost and performance
18 of a typical model that the consumer would be
19 expected to purchase without the proposed upgraded
20 or new standard in effect.

21 And you have an agenda in front of you.
22 There are two columns on the left-hand side of
23 that list. The first one is the section number in
24 the staff report. And these notes that you have
25 is an abridged edition of the staff report. So

1 there is nothing in these notes that is not
2 included in the staff report.

3 The next column is the grouping that we
4 have within the proposed regulations, themselves.
5 And we will look at these in terms of groups.

6 We plan to go through these items one by
7 one, and I would suggest that as we get into one
8 particular group of appliances that those who are
9 interested in that particular group come up to the
10 table and be prepared to participate in the
11 discussion.

12 I would point out that we all are very
13 aware that this is a holiday weekend; that people
14 want to get back home. And that we will end up at
15 the end of the day with a transcript of everything
16 that's said today; and also written comments from
17 you. And we are open to informal communication
18 with you at any time by email or telephone. And
19 so that it's really not necessary to get into
20 minor details that we could take up some other
21 time. And I would encourage you to help us move
22 this as fast as we can.

23 Do we have any questions at this stage?

24 Okay, we're doing well.

25 MR. AHMED: I just had a question. All

1 the written comments will be on the website?

2 MR. BLEES: Excuse me, sir. And for
3 everybody in the audience, --

4 MR. AHMED: Okay, --

5 MR. BLEES: -- so that we can get your
6 comments recorded, please do come to one of the
7 microphones, either at the podium or at the table.

8 MR. AHMED: A.Y. Ahmed, consultant to
9 Southern California Gas. I was just wondering,
10 you mentioned some written comments. Will they be
11 on the website by the end of the day? Any written
12 comments that were filed in the last few days.

13 MR. MARTIN: We have four comments and
14 two of them I got this morning. And they all
15 indicate that they will be filed with the docket
16 office. And I would be quite surprised if they
17 were on the website by the end of the day.

18 But I do have some copies. I have a
19 letter from Alliance Laundry Systems about the
20 commercial clothes washer regulation repeal. A
21 letter from GAMA, Gas Appliance Manufacturers
22 Association; a letter from the Holmes Group; and a
23 letter from the National Electrical Manufacturers
24 Association, NEMA.

25 I have some extra copies of that that's

1 available, but I don't think we can be able to
2 take time to get them onto the website today.

3 MR. AHMED: But eventually they will
4 make it to the website?

5 MR. MARTIN: It's our plan to get as
6 much as we can on the website. I hesitate to say
7 we'll put everything on there, because sometimes
8 we get submittals with enormous attachments that
9 might be impractical. But it is our intent to get
10 as much as we possibly can on the website.

11 We do have already on the website, well,
12 the notice of this meeting, which obviously you
13 got because you're here today. Staff report; the
14 proposed regulations; and the set of studies done
15 by PG&E's contractors. Those are already on the
16 website. And if you have other items that you'd
17 like on the website, just keep in touch with us
18 and we'll make sure they get there.

19 MR. AHMED: Thank you.

20 MR. MORRIS: Good morning, Commissioner
21 and Michael; Wayne Morris with AHAM. I just
22 wanted to ask what is the date that you would like
23 to have final comments by; and based on the
24 hearing today, I think many of us may want to file
25 comments additionally after we've heard testimony

1 and some of the information.

2 MR. MARTIN: Okay. I don't have a date
3 right at this time. What you have in your hand
4 here is the staff first draft, which the Committee
5 doesn't have responsibility for, and we will give
6 them something.

7 The next round will be something that
8 the Committee will be proposing. And I think when
9 we get to the end of the day today we'll be in a
10 better position to figure out the time situation
11 on it.

12 MR. MORRIS: Okay, generally if we have
13 comments in to you within a couple weeks, though,
14 that should be sufficient?

15 MR. MARTIN: That would be just grand,
16 yes.

17 MR. MORRIS: Okay, thank you.

18 MR. MARTIN: Okay. The first one then
19 is the hot food holding cabinets, which I assumed
20 would be the one that would move fastest. This is
21 in your notes, number 28.

22 Commercial hot food holding cabinets are
23 used in the commercial food service industry.
24 Maybe, if anybody wants to participate in this
25 discussion, while I talk you can come up to the

1 table.

2 They're used in commercial food service
3 industry primarily for keeping food the correct
4 serving temperature without drying it out or
5 further cooking it. These are electrically
6 powered, free-standing metal cabinets with
7 internal supports for holding food trays.

8 Approximately 50,000 of these are in
9 service in California; and approximately 3300 are
10 sold in California each year. The average annual
11 per use energy is 2402 kilowatt hours. The
12 proposed standards, the maximum standby energy
13 consumption of 42 watts per cubic foot of measured
14 interior volume.

15 The average per-unit energy savings
16 resulting from the proposed standard is 454
17 kilowatt hours. Statewide first year energy
18 savings resulting from the standards is
19 approximately 1.5 million kilowatt hours.

20 The table that you have, table 19B shows
21 that the design life is 15 years. The simple
22 payback period is a little more than half that.
23 So they are definitely cost effective.

24 The standard that's proposed can be met
25 by those that are insulated; and not by those that

1 are not insulated. In general, the industry is
2 supporting this and it's also an item that there's
3 an EnergyStar program that is either launched or
4 in the point of being launched.

5 So this looks like a very promising
6 possibility. And I see nobody at the table here,
7 so I presume that -- yes, come, Ted.

8 MR. BLEES: Excuse me, just a moment. I
9 see that Commissioner Rosenfeld and I have the
10 benefit of the video display of page 27 of the
11 staff report in our built-in tv system.

12 MS. McCORMACK: I can bring it up. It's
13 going to turn the lights off for just a moment,
14 and I'll figure it out here.

15 ASSOCIATE MEMBER ROSENFELD: But
16 actually just to understand, everybody has this
17 page. It's page 27 in the report, anyway, right,
18 Jonathan?

19 MS. McCORMACK: Yes.

20 MR. BLEES: Yes.

21 MR. MARTIN: Can you get it on the
22 screen, Carolyn?

23 MS. McCORMACK: Well, --

24 ASSOCIATE MEMBER ROSENFELD: Well,
25 let's --

1 MR. MARTIN: What Carolyn has is
2 identical to the handout.

3 ASSOCIATE MEMBER ROSENFELD: Right.
4 Let's rely on the hard copy and hear your
5 comments.

6 MR. POPE: Ted Pope with Energy
7 Solutions here on behalf of PG&E. Just one
8 comment I wanted to throw into the record, and
9 that is we proposed the standard to the Commission
10 of 42 watts per cubic foot. And I believe the
11 latest version of EnergyStar is 40.

12 And if manufacturers prefer it, I don't
13 see any reason not to make the state standard
14 consistent. I don't think there would be any
15 measurable impacts on the effect of that standard
16 if changed from 42 to 40.

17 So I just throw that out there if that's
18 something that manufacturers prefer for
19 consistency sake.

20 How it works is from our research is
21 that the uninsulated models are way up here;
22 insulated ones are way down here. And both of
23 those two levels are in between. And so there',
24 as far as we understand, not much product in that
25 range. So normalizing two levels probably would

1 have no impact other than perhaps assisting
2 manufacturers with simplifying requirements.

3 That's it.

4 ASSOCIATE MEMBER ROSENFELD: So,
5 Michael, how does that work? If the manufacturers
6 propose 40, do you just arbitrarily go to 40, or
7 how do you handle that?

8 MR. MARTIN: I think if the
9 manufacturers were here they would prefer us to
10 have uniformity with --

11 ASSOCIATE MEMBER ROSENFELD: Yeah.

12 MR. MARTIN: -- EnergyStar. And that's
13 certainly what I would be looking for the next
14 draft, unless somebody tells us not to.

15 ASSOCIATE MEMBER ROSENFELD: But --

16 MR. MARTIN: I think we're ready for the
17 next item.

18 ASSOCIATE MEMBER ROSENFELD: That was
19 fast. Let's keep it up.

20 (Laughter.)

21 MR. MARTIN: Okay. This is item number
22 22 in your handout, dishwasher pre-rinse spray
23 valves. Commercial pre-rinse spray valves are
24 mechanical valves installed over a sink that
25 dispense hot water under pressure to clean food

1 items off of plates and other kitchen items prior
2 to being placed in the dishwasher.

3 There's approximately 90,000 of these
4 valves in use at food establishments throughout
5 the state, where each spray valve results in the
6 use of 1566 therms of gas for water heating each
7 year. Annual statewide sales are around 18,000
8 units. The average baseline water usage is 13.5
9 gallons per minute at 60 psi of water pressure.

10 The proposed efficiency standard would
11 reduce the flow rate of these valves to a maximum
12 of 1.6 gallons per minute, while also requiring
13 the valve to pass a clean-ability test, which is
14 an important part of this proposal.

15 This water efficiency standard will
16 result in water savings of over 143,000 gallons
17 per unit. This reduction in water use will result
18 in reduced water heating requirements and in
19 energy savings of 820 therms per valve per year.

20 The statewide first year energy savings
21 would be 14.8 million therms. And from this table
22 you see the design life is estimated at five
23 years; and the payback is less than one month.

24 This appears to be the most cost
25 effective appliance that we have ever got involved

1 in.

2 ASSOCIATE MEMBER ROSENFELD: Presumably
3 there's nobody who's going to dare argue against
4 this. Uh-oh.

5 MR. MARTIN: It is something that the
6 water agencies have been giving away huge numbers
7 of. They are very enthusiastic about this.

8 ASSOCIATE MEMBER ROSENFELD: Do I hear a
9 comment back there?

10 MR. HOROWITZ: Supporting.

11 ASSOCIATE MEMBER ROSENFELD: Better be.

12 (Laughter.)

13 MR. HOROWITZ: Noah Horowitz for the
14 Natural Resources Defense Council. We obviously
15 support this and given the magnitude of the water
16 savings and the embedded energy with water, we
17 might want to also show the kWh savings that the
18 state will accrue from this.

19 ASSOCIATE MEMBER ROSENFELD: Try to get
20 down to one week of payback time.

21 (Laughter.)

22 MR. HOROWITZ: That's all.

23 ASSOCIATE MEMBER ROSENFELD: Good
24 comment, Noah.

25 MR. BLEES: I have a couple of

1 questions, Mr. Martin. I notice that in table 13B
2 the annual unit energy cost savings says it's
3 based on 67 cents per therm. Page --

4 MR. MARTIN: We've assumed gas water
5 heating. And, of course, not all water heating is
6 by gas. But I think in commercial applications
7 when it's used it's the vast majority.

8 MR. BLEES: On page 18, table 10B, which
9 is the chart, the table 4, unit heaters and duct
10 furnaces, indicates a 55 cent per therm figure.
11 Is that deliberate? Or is perhaps there a typo
12 here?

13 MR. MARTIN: I think it's deliberate.
14 There are different rates of electricity and gas
15 charges depending on the applications. But we
16 will certainly double check this and make sure
17 that whatever we put in there is defensible.

18 MR. BLEES: So the unit heaters and duct
19 furnaces might reflect a residential rate, and the
20 dishwasher valves a commercial rate, perhaps?

21 MR. MARTIN: Conceivably.

22 MR. BLEES: Okay.

23 ASSOCIATE MEMBER ROSENFELD: And we'll
24 probably never see the rates that low again,
25 anyway.

1 (Laughter.)

2 MR. MARTIN: Basically I don't have a
3 straight answer for a straight question here, but
4 we will have.

5 MR. BLEES: Okay. And then could you
6 please explain, when there are water savings you
7 get -- there are several different type of energy
8 savings that can result.

9 If the appliance uses hot water you have
10 onsite water heating savings, which could be
11 either gas or electricity. You also have onsite
12 water rate, water bill reductions.

13 Then there are also offsite energy
14 savings because of reduced pumping and treatment
15 requirements for water. Do you know, or perhaps
16 Mr. Pope can explain, which of those various
17 savings were taken into account in this analysis?

18 MR. MARTIN: I think --

19 MR. BLEES: Mr. Fernstrom.

20 MR. FERNSTROM: Gary Fernstrom, PG&E. I
21 think I can answer that. Generally in these case
22 studies we only included the first order of
23 savings. So, the second order of savings having
24 to do with those that accrue up through the supply
25 chain aren't considered. But would definitely add

1 to the benefit.

2 MR. BLEES: So then this analysis
3 reflects only the onsite savings?

4 MR. FERNSTROM: Yes.

5 MR. BLEES: All right, thank you.

6 ASSOCIATE MEMBER ROSENFELD: And if I'm
7 right, in the L.A. basin where there's a lot of
8 pumping, the water savings are something like
9 another 50 percent, in dollars, Gary, is that
10 right?

11 MR. FERNSTROM: I think Ted Pope can
12 better address the question of overall statewide
13 energy savings associated with water use. Ted?

14 MR. POPE: Yeah, just run the numbers.

15 MR. FERNSTROM: Okay, well come --

16 MR. POPE: Ted Pope, Energy Solutions.

17 MR. MARTIN: Sit down and join us.

18 MR. POPE: Okay. Ted Pope, Energy
19 Solutions, here on behalf of PG&E. As Gary
20 mentioned, we did not include typically the
21 embedded energy savings in the water efficiency
22 effects of certain measures in this roster.

23 Depending on which assumption used for
24 embedded energy, I just punched this calculator
25 real quick and it looks like about 400 kilowatt

1 hours a year savings from that spray valve. It
2 seems low to me, to be honest with you -- run it
3 again.

4 MR. FERNSTROM: Ted, while you're doing
5 the calculation could you share with us the rough
6 percentage that you're using?

7 MR. POPE: Sure. I'd rather take a
8 minute to do this correctly, but basically I would
9 go on the assumption this is largely -- I've seen
10 various numbers, but somewhere between 4 and 5
11 kilowatt hours per thousand gallons of water
12 saved.

13 And if you figure these spray valves are
14 saving on the order of a gallon and a half per
15 minute, times the assumption in our case report is
16 four hours per day, 363 days a year. So, again, a
17 gallon and a half times 60 minutes an hour times
18 four hours per day times 363, times .004 would
19 give you the kilowatt hours per year for one site.

20 So, it's -- can't do the percent
21 offhand, what that is of total savings, but it's
22 substantive.

23 ASSOCIATE MEMBER ROSENFELD: After lunch
24 why don't we give you 35 seconds to give a
25 summary.

1 MR. POPE: Absolutely, okay. Thank you.

2 ASSOCIATE MEMBER ROSENFELD: Thanks,
3 Ted.

4 MR. BLEES: And then to follow up, the
5 onsite savings are included in the analysis here.
6 Does that include both the natural gas savings
7 resulting from water heating and reduced water
8 bill charges for the water commodity? Or does it
9 just reflect the natural gas savings?

10 MR. POPE: Just natural gas savings.

11 MR. BLEES: All right, thank you.

12 MR. LUTZ: Jim Lutz, Lawrence Berkeley
13 National Laboratory. I wanted to, and
14 unfortunately I don't have, I wanted to recommend
15 that you may be missing a fair amount of
16 electricity use from discussions with water
17 utility folks that they have been monitoring this.
18 It turns out a fair number of -- a surprisingly
19 large number of commercial applications use
20 electric booster heaters. And so that you may be
21 missing this. And I will try to chase down my
22 sources on that.

23 But I don't think you really need to
24 worry about getting a shorter payback.

25 (Laughter.)

1 ASSOCIATE MEMBER ROSENFELD: Well, I'd
2 just like to see a one-week payback for the
3 record.

4 MR. MARTIN: Are we ready for the next
5 one?

6 MR. MORRIS: Michael, I have a question
7 first, please.

8 MR. MARTIN: Come up and join us at the
9 table and you won't have to pop up and down all
10 the time.

11 MR. MORRIS: Well, I think it's going to
12 be awhile before I come up again, so I just want
13 to ask a question. Wayne Morris with AHAM.

14 I just have a question, actually it's
15 not about the spray valves. It's about another
16 dishwasher product which is not on the agenda.
17 And it's in the actual proposal. And so I wanted
18 to ask a question about it.

19 Under section O on dishwashers, you all
20 have made some slight modifications to this, but
21 one of the definitions, the definition you still
22 carry over is the definition of compact and
23 standard dishwasher. And the definition is still
24 based on the inches of width of the residential
25 dishwasher.

1 The U.S. Department of Energy has
2 changed, in the recent filing and rulemaking on
3 the test procedure, to change to a place-setting
4 definition of the standard versus the compact
5 dishwashers.

6 And I would suggest that while you're
7 going through this, if possible, it would be good
8 to consolidate and harmonize this test procedure
9 with the one that DOE is using. Otherwise, there
10 are some compact dishwashers which -- or
11 dishwashers, I should say, less than 22 inches in
12 width which actually hold eight or more place
13 settings. So they're actually having I guess
14 you'd call it a lower energy usage standard than I
15 think what you would want.

16 The manufacturers are in agreement with
17 this, so you're actually missing out, if you will,
18 on some energy savings if you don't do this. And
19 it would not penalize anybody on the other side to
20 do it.

21 So, for purposes of harmonization alone
22 I would just suggest that you think about that.

23 MR. MARTIN: It is our intention for
24 federally regulated appliances to be totally in
25 synch with the federal regulations. And I

1 appreciate your bringing that to our attention.
2 And maybe sometime you could let me know where in
3 the Federal Register we find that. We'll fix it
4 up.

5 MR. MORRIS: I'd be glad to.

6 MR. MARTIN: Okay. Item number 25 is
7 traffic signals for pedestrians. Pedestrian
8 traffic signals are internally illuminated units
9 used to give instructions to pedestrians at
10 intersections. These signals include a red hand
11 signal to indicate that a pedestrian should not
12 enter the intersection, and a white walking person
13 symbol to indicate to the pedestrian that it is
14 safe to cross the intersection. These two symbols
15 are usually combined into a single housing.

16 There's approximately 150,000 pedestrian
17 signals in the state; about 30,000 non-LED
18 pedestrian signals are replaced throughout
19 California each year.

20 The baseline energy use for incandescent
21 pedestrian signals is 544 kilowatt hours per unit
22 per year. The base nonelectrical use for LED
23 pedestrian signals is 78.8 kilowatt hours per unit
24 per year.

25 The proposed standards would restrict

1 the energy consumption of the hand signal to a
2 maximum of 10 watts at 25 degrees C, and 12 watts
3 at 74 degrees C; and the energy consumption of the
4 walking person signal to a maximum of 9 watts at
5 25 degrees C and 12 watts at 74 degrees C.

6 The proposed standards reduce the per
7 unit energy consumption from 69 watts for
8 incandescent lamps to 10 watts for LED modules.
9 This results in an annual per unit saving of 465
10 kilowatt hours.

11 Statewide first year energy savings
12 based on the proposed standards are 14 million
13 kilowatt hours. And the table indicates that the
14 design life is seven years. It may be longer,
15 there isn't a great deal of experience as to how
16 long these would last. And the payback is 2.1
17 years.

18 And we already adopted standards for the
19 traffic signals for vehicles, and this is the next
20 step here. It's one with a considerable
21 additional first cost, but very dramatic savings
22 of energy.

23 Judging from the silence I presume we
24 should go on to the next item.

25 Which is item number 12, air

1 conditioners. These are very large air-cooled
2 commercial air conditioners from 240,000 Btu per
3 hour up to 760,000 Btu per hour.

4 This equipment includes commercial air-
5 cooled air conditioners with cooling capacities
6 between 240,000 Btu per hour and 760,000 Btu per
7 hour, which contain all components within a single
8 unit. There's approximately 54,000 of these large
9 packaged air-cooled commercial air conditioners in
10 California.

11 Annual sales are approximately 3600.
12 Average annual baseline energy use of the
13 equipment is 62,000 kilowatt hours per unit.
14 Proposed standard for this category of equipment,
15 it's a minimum EER of 10.0 for the first tier, and
16 10.5 EER for the second tier.

17 The per unit reduction in energy use
18 relative to the basecase for the proposed
19 standards is 3742 kilowatt hours for tier one
20 standard, and 6533 for the tier two standards.

21 The statewide first year savings
22 resulting from tier one standard is 13.5 million
23 kilowatt hours; and the first year savings
24 resulting from tier two standard is 23.5 million
25 kilowatt hours.

1 The design life is estimate at 15 years
2 with a simple payback of 1.2 years, which makes
3 this a very cost effective proposal.

4 DR. AMRANE: Good morning; Karim Amrane
5 with Air Conditioning and Refrigeration Institute.
6 I have some points I'd like to make.

7 First, regarding the economic analysis
8 that was provided in the report. Regarding the
9 cost, the incremental cost. What was done is
10 extrapolating cost figures that were derived from
11 product much smaller, 15 tons, and extrapolating
12 that to 30 tons. The cost figures are not linear.
13 You cannot extrapolate. So that's not the right
14 way of doing it.

15 When ACEEE looked at the these products,
16 looked at several analysis, but ignored one, which
17 the only one that I believe exists, is the one
18 from ASHRAE90.1. ASHRAE has done an analysis and
19 has cost figures for this type of product. Which,
20 if you used that, would give you a -- cost five
21 times as much as what has been reported from
22 ACEEE.

23 Another thing about the analysis is the
24 discount rate, 3 percent discount rate is too low.
25 DOE is doing an analysis on commercial (inaudible)

1 products right now and using about I believe it's
2 6 percent discount rate, and we believe that's
3 what should be used here.

4 Now, regarding the .2 EER deduction, for
5 those of you who are not familiar, ASHRAE has a .2
6 deduction for package system with a gas heating
7 element in it, and the .2 deduction in EER is
8 because of the additional pressure drop that you
9 will get when you have the gas heat exchanger in
10 there. So we believe that should be included, as
11 well.

12 Now, regarding the effective date of the
13 standard is 2006 effective date, we feel it's too
14 early for industry to be ready. We would like to
15 suggest January 1, 2010 as the effective date.
16 Why that date? It's a critical date for the
17 industry. It's the phase-out date of HCFCs; R22
18 is really the refrigerant used in commercial air
19 conditioners. So all manufacturers will be
20 redesigning, retooling to be ready for the R22
21 refrigerants. So we feel that's an appropriate
22 date.

23 Finally, I just would like to say that
24 the industry supports a federal standard at 10
25 EER, with the .2 deduction. So effective January

1 1, 2010. Thank you.

2 ASSOCIATE MEMBER ROSENFELD: Steve,
3 before you introduce yourself, could I just ask.
4 There's tier one and there's tier two. Michael,
5 could you remind us about these are presumably
6 different effective dates, or can you just say a
7 few words about tier one versus tier two?

8 MR. MARTIN: Yes, they do have effective
9 dates, different effective dates. And I would
10 need to look it up. And maybe Steve has the dates
11 available?

12 MR. NADEL: My recollection is October
13 1, 2006 for tier one; and January 1, 2010 for tier
14 two. The second date was designed to overlap with
15 the change in refrigerant that Karim talked about.

16 ASSOCIATE MEMBER ROSENFELD: So I just
17 wasn't quite clear with the ARI comment, which
18 tier you were referring to. Pardon me if I'm
19 confused, but --

20 DR. AMRANE: No, no, and I'm sorry. No,
21 we are referring to tier one. We would like tier
22 one in 2010. It's just too early for us to be
23 ready for 2006.

24 MR. NADEL: Steven Nadel, the American
25 Council for an Energy Efficient Economy. And

1 we've been working with PG&E on this particular
2 case study. I wanted to respond to a couple of
3 the points that were made.

4 First, Karim noted that we have
5 extrapolated from figures that are much smaller
6 than 30 tons. We tried to use the best data that
7 we could. In two cases is for 15-ton pieces of
8 equipment; in two cases it is for equipment 20
9 tons, and 20 tons is actually included in this
10 size range. And one case it was equipment greater
11 than 20 tons.

12 So, we're maybe a little lower on
13 average, but we're not much smaller, I would say,
14 than that. We used the best figures we could.

15 Regarding the ASHRAE figures, these were
16 developed, as I recall, in 1992 by an ASHRAE
17 committee. They were very controversial at the
18 time. What happened was the manufacturers polled
19 their members; got a whole range of cost estimates
20 from the different manufacturers. And the only
21 figure that the ARI would report to ASHRAE was the
22 90th percentile figure. Meaning the figure that
23 90 percent of the manufacturers said they could
24 meet or do it more cheaply.

25 They deliberately skewed the cost to the

1 most expensive manufacturers at the time, arguing
2 that, gee, maybe some small manufacturers, maybe
3 some manufacturers have extra cost, that the
4 analysis should be based on the more extreme, the
5 higher end costs.

6 The ASHRAE committee did not like it.
7 They asked for a 50th percentile with the average,
8 and at the time the manufacturers would not
9 provide it.

10 Since then, for other product classes,
11 the slightly smaller products, the 5 to 20 tons,
12 DOE has done some analysis and determined that
13 there is an excellent chance that the prices of
14 this equipment are substantially lower than what
15 ASHRAE had estimated in 1992. Again, using these
16 90th percentile curves.

17 So, for that reason we mention the
18 ASHRAE values; we include a citation in the case
19 study to a critique of the ASHRAE values. But did
20 not go into them at length because they are one, a
21 dozen years old; two, they were 90th percentile,
22 not even median, if you will; and, three, there is
23 more recent information that was available that we
24 thought was much better.

25 In terms of a discount rate, I'll let

1 staff respond to that. We used what we understood
2 to be CEC guidance on an appropriate discount
3 rate.

4 In terms of the 0.2 EER deduction for
5 use of gas, I'd be interested in seeing some
6 documentation to support that. It is about 0.2.
7 I haven't seen that before. It may well be. It
8 would be useful to see some documentation. And
9 I'd be happy to look at it and see whether it made
10 sense. Maybe staff would, likewise. I'm not
11 saying no, I'm not saying yes. I just have not
12 seen documentation. All I've seen is, yeah, we
13 think it's about this value. And it would be
14 appropriate, I think, to provide some
15 documentation.

16 Regarding the effective date of tier
17 one, I would note that Maryland has also already
18 enacted these standards. And if I'm recalling
19 correctly, the Maryland standards take effect in
20 2006. I believe it is January, but I have to
21 double check that. So this state is actually
22 slightly later than Maryland.

23 I'd also note that Connecticut has also
24 adopted the same standards, or virtually the same
25 standards. They did include the 0.2 difference

1 for gas equipment. As I recall, Karim, the
2 equipment -- those Connecticut standards take up
3 at January 1, 2008, is my recollection. But I
4 would have -- I would have to check that for sure.
5 I might have some stuff in my notes to check on
6 that later.

7 So, that's a little bit of additional
8 information on some of these points.

9 MR. MARTIN: We will certainly look into
10 all these items. Oh, excuse me, Jim.

11 MR. MULLEN: Jim Mullen with Lennox.
12 Just a quick comment for a point of reference on
13 one of Karim's points.

14 DOE's in the middle of doing the
15 analysis on equipment from basically 5 tons
16 through 20 tons. And as I recall their cost
17 curve, the minimum manufacturing cost increase for
18 one point of EER is about \$50 per ton. Which
19 would make this \$500 figure a little low on a 40
20 ton unit. So, that might be another place to look
21 for some data on equipment costs.

22 MR. NADEL: Steve Nadel, ACEEE, again.
23 The prime costs we actually used were the
24 estimates that LBL came up with for DOE in that
25 rulemaking. We should double check those figures,

1 but I believe we have used the estimates that they
2 developed. These were the ones that they released
3 in September of 2003.

4 MR. MARTIN: Okay. I sense that staff
5 has its own work set for looking into these
6 concerns and documenting and advising the
7 Committee as to what we should do about it.

8 DR. AMRANE: Karim Amrane with ARI. I
9 have another question for Steve. I mean what's
10 the reason to use a 3 percent discount rate? Can
11 you elaborate on that?

12 MR. MARTIN: This is the rate that we
13 have used for a very long time. And there was a
14 discussion of this in another rulemaking that we
15 will certainly make available to you. I don't
16 feel qualified, personally, to discuss it right
17 now. And if Bill Pennington is here -- I guess
18 he's not -- he's planning --

19 ASSOCIATE MEMBER ROSENFELD: Michael, do
20 you want to say a word or so about 3 percent real
21 discount rates? I'm sorry -- Jonathan.

22 I can say just two sort of obvious
23 things. The 3 percent discount rate for
24 California is legislated. And I guess the general
25 idea is that particularly if you think about

1 global warming in 100 years or four or five
2 generations, the thought is that your great-great-
3 grandchildren 100 years old should be worth at
4 least 1 percent of what we're worth today.

5 And the other point is that if you go to
6 the federal number, which, as you said, is more
7 like 6 percent real, it doesn't make a hell of a
8 lot of difference. That is that 1.2 years simple
9 payback time would become 1.4 years or something.
10 It's never made a difference in terms of
11 acceptability unless you're out at eight years or
12 something like that.

13 I think actually there was a
14 recommendation that we start, for perfectly
15 sensible questions like that, that we start
16 publishing the benefit costs with two different
17 numbers. But the simple payback time is an
18 approximation anyway, so.

19 MR. BLEES: In addition to the staff
20 document that was placed out on the front table,
21 the notes for staff presentation, there's a longer
22 staff document which has been on the website for a
23 couple of weeks now. It's called update of
24 appliance efficiency regulations preliminary draft
25 staff report.

1 And the appendix to that staff report
2 has a long explanation of discount rates and the
3 rationale for the selection of 3 percent. And I'd
4 just note that there's a table, there's a page in
5 here that indicates that the real after-tax
6 discount rates for 30 year fixed home loans, home
7 equity loans, and credit cards range from 1.4
8 percent to 5.16 percent, with an average of 2.77
9 percent.

10 And, of course, those discount rates do
11 not take into account the societal perspective
12 which Commissioner Rosenfeld mentioned, and which
13 is certainly appropriate to include in these
14 calculations.

15 ASSOCIATE MEMBER ROSENFELD: Well, I do
16 want to sort or marvel that if you take the 100
17 year point of view, at 3 percent a year your
18 descendants, after 100 years, are worth 5 percent
19 of what we're worth today. If you take 6 percent
20 real they're worth 5 percent of 5 percent. Which
21 seems always a little steep to me, if we're going
22 to leave them with a better world.

23 MR. MARTIN: I'd like to correct what I
24 just said, referring to a different rulemaking,
25 that I was confused. It's actually this

1 rulemaking, and it is appendix A that I was
2 referring to, which treats this in some detail
3 that Jonathan just mentioned.

4 ASSOCIATE MEMBER ROSENFELD: Steve.

5 MR. NADEL: Just add one more point. I
6 know there's a little bit of discussion about the
7 incremental costs. As part of the case study we
8 also did a sensitivity analysis. What if the
9 costs were twice as high as we had estimated.

10 And that's provided at the very end of
11 section 5.3 of this case study. And it showed
12 very substantial net present value benefits to the
13 customer even if costs are double what we had
14 estimated. Even if incremental costs, not total
15 costs, but incremental costs are double. So I
16 think there's quite a bit of room even if these
17 estimates are not perfect.

18 MR. MARTIN: Okay, the next item that we
19 have is pool pumps and spas, which is numbers 20
20 and 21. Come up to the table here and join us.
21 You don't like to sit down with us, huh?

22 MR. MORRIS: I'd sooner get my exercise
23 here, Michael. Wayne Morris with AMI. I have a
24 question about one of the items that was included
25 in the original proposal. And that was having to

1 do with evaporative coolers. Is that something
2 you would like to talk about now, or wait until
3 later?

4 MR. MARTIN: That's, I think, in the one
5 called the air moving equipment, I believe.

6 MR. MORRIS: Air moving equipment, okay.
7 I didn't know whether that was going to be there
8 or here.

9 MR. MARTIN: Well, everything's in there
10 somewhere.

11 UNIDENTIFIED SPEAKER: Evaporative
12 cooler's in number 13.

13 MR. MARTIN: It's number 13, yes, which
14 we're --

15 MR. MORRIS: Number 13; and where --
16 okay.

17 MR. MARTIN: -- heading, if we can keep
18 going at this rate, it won't be very long before
19 we talk about that.

20 (Laughter.)

21 MR. MORRIS: And where, also, were you
22 planning to do air cleaners, residential air
23 cleaners? Is that also in that same 13, section
24 13.

25 MR. MARTIN: That's item number 17 --

1 MR. MORRIS: 17, okay, got'cha.

2 MR. MARTIN: -- in the first column,
3 that's the 13 through 17.

4 MR. MORRIS: Okay, thank you. Sorry.

5 MR. MARTIN: And we won't miss it.

6 ASSOCIATE MEMBER ROSENFELD: We await
7 you expectantly.

8 MR. MARTIN: Okay, let's try 20 and 21
9 now.

10 MR. BLEES: Excuse me, Mr. Martin, I'm
11 sorry, but there were a couple of names on the
12 sign-up sheet for air conditioners. I just want
13 to make sure that Mr. Myrick, Mr. Birdsell, Mr.
14 Massey, do any of these gentlemen wish to make
15 comments on air conditioners now? No, I guess
16 not. All right, thank you.

17 MR. MARTIN: Okay, let's go to items 20
18 and 21. Twenty is residential pool pumps.
19 Residential pool pumps are pump and motor
20 combinations that are used to circulate and assist
21 in the filtration of swimming pool water. There
22 are approximately 1.1 million residential pool
23 pumps in service throughout California.
24 Approximately 143,000 residential pool pumps are
25 sold in California each year.

1 The average annual residential pool pump
2 energy consumption is 2450 kilowatt hours. Design
3 standards are being proposed for residential pool
4 pumps including the limiting of the pool pumps
5 motor service factor, a multiplier, which when
6 applied to the rated horsepower indicates a
7 permissible horsepower loading which may be
8 carried; requiring two-speed motors, and requiring
9 that pool pump motor controls are capable of
10 controlling two-speed pool pump motors.

11 The estimated annual by unit energy
12 savings resulting from the proposed design
13 standards is 931 kilowatt hours. The statewide
14 first year energy savings resulting from the
15 proposed design standards is 133 million kilowatt
16 hours.

17 The table shows a design life of ten
18 years, and a simple payback of 5.4. And the
19 regulation that actually states these proposals,
20 the proposed regulation, has an error in it which
21 talks about the low speed being one-third of the
22 high speed. And that should have been one-half,
23 rather than one-third.

24 The other one that is related to this is
25 number 21, portable electric spas. Portable

1 electric spas are prefabricated, self-contained
2 units that are electrically heated. The term
3 portable is somewhat of a design for weight-
4 lifters, I think.

5 (Laughter.)

6 MR. MARTIN: There's approximately
7 440,000 portable electric spas in service
8 throughout California. About 48,000 sold in
9 California each year. The average per unit energy
10 consumption is 2500 kilowatt hours. The proposed
11 standard is a maximum standby loss. The average
12 annual per unit energy savings gained through the
13 proposed standard is 500 kilowatt hours.

14 Statewide first year energy savings
15 resulting from the standard is 24 million kilowatt
16 hours. This one shows a design life of ten years,
17 and a simple payback of 5.2.

18 And the people who wrote the case study
19 are here at the table. I don't know if anybody
20 else wants to add anything.

21 MR. RAINER: Leo Rainer with Davis
22 Energy Group, representing PG&E. Only comment, I
23 want to thank you for correcting the low speed
24 value.

25 One other change that is in the case

1 studies that are on the docket that is not
2 currently in the standard is a detailed
3 specification of the test method and the values to
4 be listed. And that is specifically --

5 MR. MARTIN: That's the test method for
6 the pumps, right?

7 MR. RAINER: For the pumps. That's two
8 pump curves and an energy factor at each pump
9 curve.

10 MR. MARTIN: Okay. Can we go on to 26
11 and 27 on luminaires. This is one for which I was
12 given advance copy of comments from the National
13 Electrical Manufacturers Association, which you
14 gentlemen on the dais here have copies of.

15 There are two involved here. The
16 luminaires for metal halide lamps contain a
17 ballast that's designed to provide the required
18 starting voltage and to regulate the starting and
19 operating current for proper metal halide lamp
20 operation. The ballasts may be either probe-start
21 or pulse-start.

22 There are approximately 3.1 million
23 metal halide luminaires in California.
24 Approximately 363,000 are sold each year. Average
25 annual per unit energy consumption is 2015

1 kilowatt hours.

2 The proposed standards contain a design
3 standard requiring the use of a pulse-start
4 ballast and a minimum ballast system efficiency.
5 Related to basecase of the probe-start lamp and
6 magnetic ballast, the proposed standard
7 requirement for pulse-start ballasts would reduce
8 energy consumption by 307 kilowatt hours per unit.

9
10 The proposed standards requirement for
11 minimum ballast system efficiency would further
12 reduce energy consumption by 219 kilowatt hours,
13 resulting in a total savings of 525 kilowatt
14 hours. First year savings approximately 61
15 million kilowatt hours for vertical position,
16 pulse-start. And an additional 76 million
17 kilowatt hours for electronic ballasts and other
18 orientation luminaires. For a total annual
19 savings of 137 million for pulse-start lamps and
20 electronic ballasts.

21 The design life is shown as 20 years
22 with a simple payback for tier one at .85 years;
23 for tier two at 1.19 years. And the combination
24 of the two brings us to one year.

25 And as I mentioned, we do have written

1 comments from NEMA on this particular one. One of
2 the questions on this one is whether -- is a
3 difference of opinion that we have over whether
4 these are federally regulated.

5 We have made the assumption that there
6 is a standards for some metal halide lamps and the
7 other ones are not federally regulated appliances.
8 NEMA is claiming that all metal halide lamps are
9 federally regulated appliances, and therefore we
10 need a petition for a waiver from preemption in
11 order to be able to adopt the standard, or to
12 bring the standard into effect.

13 I don't think that Mr. Gray from NEMA is
14 going to be here today, but I'm not sure if
15 anybody else representing this industry is here.
16 But we do have written comments.

17 MR. NADEL: Steven Nadel from the
18 American Council for an Energy Efficient Economy.
19 I have not yet seen the NEMA comments, and I guess
20 one request would be if I could get a copy of
21 them. And maybe this afternoon have an
22 opportunity to respond to any points that they
23 raise.

24 The one thing I can comment on now is
25 the question about whether this is preempted or

1 not. I believe their rationale, as best as I
2 understand it, is that high intensity discharge
3 lamps, of which metal halide is one type, are
4 mentioned in the Energy Policy Act of 1992. That
5 Act directs DOE to consider whether standards
6 might make sense. DOE has not even finished a
7 determination analysis to determine whether they
8 do make sense; it's been now a dozen years.

9 Our interpretation of the law is that
10 these do not become covered products until DOE
11 decides to, in fact, set standards for these
12 products. They haven't even determined yet
13 whether they think it's worthwhile for them to do
14 so. So at least our interpretation of the law is
15 that they are not yet covered products.

16 The one precedent for this is in the
17 Energy Policy Act Congress also said that
18 distribution transformers are another product
19 which DOE should consider standards. DOE has
20 since determined that standards may make sense,
21 and they are now slowly starting to develop
22 standards for these products. But I have not
23 heard anything from DOE saying that they are, in
24 fact, covered products, just based on the
25 determination.

1 There also are several state standards
2 including California, and I haven't heard anybody
3 challenging that those standards are preempted
4 because DOE is slowly developing standards.

5 So, I would defer to legal counsel on
6 this, but my sense is that's a bit of a stretch to
7 argue that the fact that they are mentioned but
8 they haven't even had a determination, let alone
9 set a standard means that they're preempted.

10 MR. MARTIN: I would suggest that we
11 should take Steve's offer up and let him, while we
12 have our lunch he can study these comments and see
13 whether he has anything more to add. Because I
14 think he's correct in some of the things that I
15 said in there. I was of the impression that there
16 already were federal standards for these, and I
17 guess I'm wrong.

18 MR. NADEL: My understanding is there
19 are no current federal standards. That DOE is
20 still determining whether it might make sense to
21 have a rulemaking.

22 MR. MARTIN: Okay, good.

23 ASSOCIATE MEMBER ROSENFELD: We need
24 more time, right, Steve.

25 MR. NADEL: Yes, a dozen years hasn't

1 been enough for a determination.

2 MR. HOROWITZ: Noah Horowitz for the
3 Natural Resources Defense Council. A quick
4 clarifying question on the torchiere section.

5 As you know, in the past there was some
6 confusion as to how you calculate compliance. May
7 torchieres that are on the market today have the
8 bowl on top, but also separate coming off the main
9 stick one or more incandescents. And our
10 interpretation of this is that the entire
11 torchiere shall not be able to consume 190 watts.

12 I can provide a suggestion on how to
13 clarify this further. But, Michael, I'm curious,
14 is it just the top torchiere or the entire fixture
15 that's --

16 ASSOCIATE MEMBER ROSENFELD: Noah, I'm
17 confused. Which page is this --

18 MR. HOROWITZ: This is 120 in the draft
19 that came out from the CEC. Section N, subsection
20 2.

21 ASSOCIATE MEMBER ROSENFELD: Is there a
22 page number for --

23 MR. HOROWITZ: 120.

24 MR. MARTIN: It's in the regulations.

25 ASSOCIATE MEMBER ROSENFELD: Oh, in the

1 regulations.

2 MR. HOROWITZ: In the full regs, I'm
3 sorry.

4 MR. MARTIN: Full regulations.

5 MR. HOROWITZ: I've got it here,
6 Michael, if that will be helpful.

7 MR. MARTIN: Oh, okay. It's in section
8 1605.3-N. And in the copy Noah has it's page 120,
9 but what page it is on yours depends on your
10 printer.

11 ASSOCIATE MEMBER ROSENFELD: Just read
12 Noah's.

13 MR. HOROWITZ: I don't want to take up
14 too much time, and this gets into wordsmithing
15 that we can do offline. But it basically says
16 torchieres manufactured on or after March 1, 2003,
17 shall not be physically able to draw more than 190
18 watts with installation of any commercially
19 available light source.

20 So, in terms of which sockets this
21 covers, we think it should apply to the entire
22 fixture. And we'll provide you a quick editorial
23 on that to amend that.

24 MR. MARTIN: Okay. This is a
25 clarification of an existing adopted standard

1 that's already in effect.

2 MR. FERNSTROM: Noah and Michael are
3 making this recommendation because there are
4 torchiere fixtures in the stores now that utilize
5 two 150 watt lamps, two separate lamps, claiming
6 to comply with the regulation, yet not truly
7 complying with the intent of the regulation.

8 MR. HOROWITZ: Enough said. Thank you.

9 MR. MARTIN: Thank you. Okay, I think
10 that was 26, and I don't think I read 27. Twenty-
11 seven is under-cabinet fluorescent lamp
12 luminaires. The other luminaire one.

13 This category of luminaire typically
14 consists of T12 type fluorescent task lighting
15 included with modular office furniture. There's
16 approximately 5.3 million under-cabinet luminaires
17 in California that could be affected by the
18 proposed standard. Approximately 240,000 are sold
19 in California each year.

20 The typical T12 magnetic ballast based
21 under-cabinet luminaire uses 86 kilowatt hours per
22 year; and the typical T9 magnetic ballast based
23 under-cabinet luminaire uses 70 kilowatt hours per
24 year.

25 A majority of the affected under-cabinet

1 lighting, 86 percent, is comprised of T12 with
2 magnetic ballasts. A minimum ballast efficacy is
3 proposed for single- and two-lamp under-cabinet
4 luminaires. The proposed standards will save an
5 average of 16 kilowatt hours per unit annually.

6 The statewide first year energy savings
7 is 760,000 kilowatt hours. And here we show a
8 design life of 15 years, a simple payback of 2.7.
9 And I need to mention that this is also an item
10 that NEMA has provided written comment on that we
11 will certainly respond to.

12 Okay, the next one then is 23 and 24.
13 Those were the luminaires, and this, now we're
14 coming down to lamps.

15 And I think my comments about preemption
16 were actually incorrect that this -- NEMA's
17 comments about preemption were referring to lamps
18 rather than these luminaires.

19 So we're on section 23. We've referred
20 to these as state-regulated general service
21 incandescent lamps. There are ones that we also
22 have modified the definition of, the terminology
23 for, we call federally regulated general service
24 incandescent lamps.

25 This was the item that NEMA was claiming

1 we are preempted on.

2 The general service incandescent lamps
3 covered by the proposed standard include those
4 that are nonreflector, medium screw based,
5 incandescent lamps intended for general ambient
6 lighting. The wattage range of the proposed
7 standard is from 25 watts to 150 watts.

8 There's approximately 10 million general
9 service incandescent lamps covered by the proposed
10 standard in service throughout California.
11 Approximately 74 million sold each year. Average
12 annual per use energy consumption is 60 kilowatt
13 hours.

14 Proposed two-tiered efficiency standards
15 which limit the power use based on lamp type apply
16 to three categories of general service
17 incandescent lamps. The average annual per unit
18 energy reduction resulting from tier one standards
19 would be 2.2 kilowatt hours. The average annual
20 per unit energy reduction resulting from tier two
21 standards would be 6 kilowatt hours.

22 The statewide first year energy savings
23 resulting from tier one standards would be 163
24 million kilowatt hours. The statewide first year
25 energy savings resulting from the tier two

1 standards would be 444 million kilowatt hours.

2 Here we show a design life of one year,
3 and since there's no added cost for tier one, I'm
4 not sure whether not-applicable or zero is the
5 simple payback period. Tier two is .7 of a year.

6 And let me go on to the other lamp
7 one --

8 ASSOCIATE MEMBER ROSENFELD: Michael, my
9 usual confused question. Can you talk about tier
10 one and tier two and what the difference is?
11 Roughly.

12 MR. MARTIN: Once -- that would be grand
13 if you would, yes, please.

14 MR. CALWELL: My name is Chris Calwell
15 from Ecos Consulting. I'm here on behalf of PG&E.
16 And we conducted the analysis for the case study
17 on general service incandescent lamps.

18 Just one clarification to Michael's
19 point and then I'll be happy to address your
20 question, Commissioner Rosenfeld.

21 Michael, the estimate of the case report
22 regarding the number of general service
23 incandescent lamps in use in California is
24 actually approximately 300 million. So I think
25 there was a typo in the staff draft, because the

1 number of units estimated used in the staff draft
2 is 100 million units.

3 The simple difference between tier one
4 and tier two has to do with the technology
5 employed to achieve the efficiency benefit. So in
6 tier one there was a slight tradeoff made between
7 the lifetime of the lamp and its efficacy, which
8 doesn't require a material change to the lamp.

9 Tier two involved using some kind of an
10 enhanced gas fill, like Xenon or one of the other
11 less expensive gases of that type, which can
12 further insulate the filament and thereby achieve
13 higher efficiency for a given power input.

14 ASSOCIATE MEMBER ROSENFELD: And my
15 other dumb question is, Michael, you talked about
16 state regulated versus federally regulated.

17 MR. MARTIN: Yes.

18 ASSOCIATE MEMBER ROSENFELD: Can you or
19 Chris say a few words about that?

20 MR. CALWELL: Actually, Steve looks like
21 he's leaping to respond --

22 ASSOCIATE MEMBER ROSENFELD: I'm sorry,
23 Steve.

24 MR. NADEL: Okay. This, in particular,
25 refers to the incandescent reflector lamps, the

1 lamps such as the one I'm holding up.

2 In the Energy Policy Act of 1992 the
3 federal government regulated incandescent
4 reflector lamps. But they have a very specific
5 definition of incandescent reflector lamps that
6 basically -- that specifically excludes BR and ER
7 lamps. And I'll explain what those are in just a
8 second. And also only covers lamps greater than
9 2.75 inches in diameter. So those are all
10 federally regulated products.

11 The way staff has constructed the
12 regulations there's a proposed definition of state
13 regulated products that specifically include
14 certain items that are not part of the federal
15 definition. The BR and ER are included in the
16 state definition because they are specifically
17 excluded from the federal definition. The state
18 definition also includes lamps from 2.25 to 2.75
19 inches in diameter, to pick up a certain class of
20 common product that are excluded from the federal
21 definition.

22 So, the state regulated products are
23 products deliberately excluded from the federal
24 regulation, and is actually part of the definition
25 adopted by Congress.

1 ASSOCIATE MEMBER ROSENFELD: Thank you.

2 MR. CALWELL: I think the only thing I
3 would add to that, the Energy Policy Act also
4 called for Department of Energy to consider
5 regulation of general service incandescent lamps,
6 which, like the previous case Steve mentioned,
7 they have declined to do. And the deadline for
8 them to have done so was, I believe, about two
9 years ago.

10 MR. FERNSTROM: Maybe just one short
11 comment about the issue here. I believe the
12 intent of the federal regulations was to prohibit
13 the sale of relatively inefficient R lamps. And,
14 in fact, what we see on the shelves in all the
15 stores now are BR and ER lamps, which for all
16 practical purposes, have filled the market need of
17 R lamps.

18 So the regulation has failed to have the
19 desired effect. And this would close that
20 loophole in California, anyway.

21 MR. NADEL: Just to add slightly to what
22 Gary said, the BR lamps were excluded from the
23 federal regulations because I remember at a
24 meeting a very small manufacturer said, oh, we
25 have a very small niche product called a BR lamp.

1 you should exclude them. We apply them in energy
2 saving applications --

3 ASSOCIATE MEMBER ROSENFELD: Energy
4 saving?

5 MR. NADEL: That's what they said. No
6 one had ever heard of it before. We all went back
7 to our technical manuals and discovered that yes,
8 there was a special BR class. This is an example
9 I now have. It has a little bulge right here. So
10 bulge reflector as opposed to normal reflector.

11 Unfortunately, subsequently first one
12 major manufacturer, and then all the major
13 manufacturers came out with new BR lamps in order
14 to take advantage of this exemption. And roughly
15 speaking -- I have to look up the figures -- I
16 think more than half of the reflector lamps now
17 sold in California for residential use are, in
18 fact, the BR, whereas before this federal
19 regulation I doubt there were even fractions of 1
20 percent.

21 So it has become an enormous loophole
22 which is what we're recommending get closed, at
23 least in California.

24 ASSOCIATE MEMBER ROSENFELD: Bravo.

25 MR. MARTIN: Okay, we have another lamp

1 one -- let's see, that was 23 was general service
2 incandescent lamps.

3 Twenty-four, state regulated
4 incandescent reflector lamps. This category of
5 lamp is designed to direct light in an arc that
6 measures less than 180 degrees. These lamps are
7 commonly used as down lights in recessed lighting
8 fixtures and in other applications where light is
9 required to be aimed in a particular direction.

10 There's approximately 40 million
11 incandescent reflector lamps in service throughout
12 California. The annual sales of incandescent
13 reflector lamps in California are approximately
14 18.9 million; 10.1 million for the residential
15 sector, 18.8 million for the commercial sector.

16 The annual per unit energy use for
17 incandescent reflector lamps used in the
18 residential section is approximately 61 kilowatt
19 hours; in the commercial sector the annual per
20 unit energy use is approximately 266 kilowatt
21 hours.

22 The proposed standards require minimum
23 efficacy levels for different lamp wattage ranges.
24 The proposed standards will result in an annual
25 per unit energy savings of 11 kilowatt hours for

1 lamps used in the residential sector, and 47.8
2 kilowatt hours for lamps used in the commercial
3 sector.

4 Statewide first year energy savings will
5 be 81 million kilowatt hours for the residential
6 sector; and 158 (sic) kilowatt hours for the
7 commercial sector.

8 This one shows for residential sector
9 a --

10 ASSOCIATE MEMBER ROSENFELD: You better
11 put a million in there on the last line.

12 MR. MARTIN: Pardon me?

13 ASSOCIATE MEMBER ROSENFELD: 158 million
14 kilowatt hours for the commercial sector, huh?

15 MR. MARTIN: It must be. Thank you for
16 correcting that.

17 The design life is 3.4 years for
18 residential with a simple payback of 1.9; the
19 commercial, the life is much shorter, 0.8; and the
20 payback is 0.6 years. However, in addition to
21 energy savings, the more efficacious lamps
22 typically have longer lives reducing relamping
23 costs, particularly for commercial customers,
24 where changing bulbs usually involves labor costs.
25 This chart only shows savings and the resulting

1 payback period resulting from the energy savings.

2 This, once again, is covered in the NEMA
3 comments.

4 ASSOCIATE MEMBER ROSENFELD: Steve.

5 MR. NADEL: NEMA is not here; I have
6 since had a chance to look at their comments. If
7 it is appropriate now I could respond to a couple
8 of the comments, both related to the incandescent
9 product we're now discussing, as well as to the
10 HID products we discussed 15, 20 minutes ago.

11 ASSOCIATE MEMBER ROSENFELD: You're a
12 speed reader, huh?

13 MR. NADEL: They were only three pages.
14 So it was easier. I was expecting something
15 perhaps longer. Would now be appropriate?

16 ASSOCIATE MEMBER ROSENFELD: Jon?

17 MR. BLEES: Certainly, please go ahead.

18 MR. NADEL: Okay. First, with regard to
19 the incandescent, the general service incandescent
20 lamps, as Chris pointed out, DOE was instructed in
21 the Energy Policy Act to consider standards. They
22 haven't.

23 As I read the details of the NEMA
24 comments they also seem to be pointing out that
25 the Federal Trade Commission does have regulations

1 for labeling of incandescent lamps. And they seem
2 to be implying that because the Federal Trade
3 Commission requires labeling these products that
4 also preempts any standards setting.

5 That strikes me as a bit of a stretch.
6 As I recall, and legal counsel should double check
7 this, the section of the Energy Policy Act calling
8 for FTC to institute labeling is different from
9 the section of the Act that lists all the
10 different covered products. So they seem to be
11 potentially applying one section and pretending it
12 applies somewhere else.

13 Regarding the HID lamps, the metal
14 halide lamps, they do raise a couple of points in
15 these comments that I wanted to address. It
16 appears, as I read this, that they are not
17 claiming that they are preempted now, state
18 regulations, but they're saying DOE is starting to
19 do a rulemaking; gee, maybe they'll finish a
20 determination this year. And typically there's a
21 three- to four-year rulemaking. Then typically
22 three years before it takes effect.

23 They're kind of warning you that DOE may
24 be setting a standard, at some point in the future
25 you may be preempted. That's at least my

1 interpretation of what they have written.

2 They also note, in terms of specific
3 standards that are proposed, that the pulse-start
4 lamps are not available in all wattages and for
5 all orientations. There's different lamps for
6 vertical versus horizontal versus what's called
7 universal position.

8 This is all noted in the case study and
9 the proposed standard only applies to wattages and
10 positions initially for which there are
11 substantial products. In particular we emphasize
12 the vertical position lamps in the first year to
13 take effect 2006. It would extend to other
14 positions not till 2008.

15 From discussions with a number of
16 manufacturers they are working on products, and we
17 expect a very full line of products by 2008. But
18 we felt that it's worthwhile to give an extra two
19 years to make sure those products are available.
20 They probably will be available by 2006, but we
21 wanted to err on the side of caution.

22 They also note that it is difficult
23 sometimes to retrofit a pulse-start product into
24 an existing fixture. This was a point they raised
25 up in an informal meeting we had with them in San

1 Diego a few months ago. And at their suggestion
2 the proposal has been modified to regulate the
3 fixture, not the lamp. So it only applies when a
4 new fixture is installed, not when the lamp burns
5 out. This comment seems to be based on a much
6 earlier version than we tried to address their
7 concern and accept their recommendation.

8 Finally, they note that the existing
9 title 24 regulations do set watt-per-square-foot
10 limits. And shouldn't that be enough, effectively
11 they're saying. You probably know much better
12 than I do the details of title 24, but my
13 understanding is that the watt per square foot
14 doesn't apply everywhere a fixture may be
15 installed. It certainly applies to new
16 construction and major renovation. I'm not sure
17 if somebody replaces one fixture all of a sudden
18 they have to start doing a title 24 watts-per-
19 square-foot calculation. I suspect not.

20 Also, I think the two can be additive.
21 They can provide additional savings, one relative
22 to the other. So I do think the proposal makes
23 sense, given -- and this is an attempt to respond
24 to their comments.

25 ASSOCIATE MEMBER ROSENFELD: Thank you.

1 MR. MARTIN: The next group I've loosely
2 called air moving equipment. This is 13 through
3 17. And you'll notice there is no cost
4 effectiveness chart in several of them because
5 there is no standard proposed.

6 The first one is evaporative coolers.
7 This is number 13. This equipment uses the
8 process of introducing moisture into nonsaturated
9 air stream as a means of cooling, combining a fan,
10 water supply, controls and an evaporative media
11 through which air travels to deliver moist cooler
12 air.

13 The scope of the product excludes
14 portable spot evaporative coolers. There's
15 approximately a million of these in use in
16 California. Approximately 100,000 sold each year.

17 The average baseline energy use is 479
18 kilowatt hours per year. And no minimum
19 efficiency level is being proposed for evaporative
20 coolers at this time. The standards propose the
21 testing and certification of this equipment to the
22 Commission.

23 There just wasn't enough available
24 public information to propose a specific standard.
25 And there you are.

1 MR. MORRIS: Wayne Morris with AHAM.

2 ASSOCIATE MEMBER ROSENFELD: Wayne, one
3 second. So, Michael, the idea is that the
4 consumer gets a label and that's really what's
5 new?

6 MR. MARTIN: We don't actually -- I
7 don't think we're referring to a label. We're
8 referring to -- there is a test method available
9 and manufacturers are required to use it and to
10 provide the data which would go into our database.

11 ASSOCIATE MEMBER ROSENFELD: Thank you.

12 MR. MARTIN: Go ahead, Wayne.

13 MR. MORRIS: Thank you, Michael. We
14 represent some of the evaporative coolers that are
15 made. I would just like to be brief with some
16 remarks and we'll follow up with some written
17 comments.

18 The present definition of evaporative
19 cooler that's called out in the proposed
20 regulations needs some clarification. There are
21 many different kinds, styles, configurations of
22 evaporative coolers that are out there in the
23 marketplace in California. And we think the
24 Commission needs to be much more specific about
25 the types.

1 The reason I say that is that the test
2 procedure that's called out is an ASHRAE test
3 procedure for measuring method of testing direct
4 evaporative air coolers. And I think that we need
5 to be very careful about making sure that we are
6 consistent throughout. Because this test
7 procedure applies to only certain kinds of
8 evaporative coolers. There is no test procedure
9 for many of the smaller and other types of
10 configuration evaporative coolers that are used.

11 So we would ask that the CEC go back,
12 and we could either work together or work with the
13 consultants or whatever, and come up with a type
14 of a definition that would be a little clearer as
15 to exactly what it is that you all are wishing.

16 We think that what you're looking for
17 are the fairly large heavy residential type of
18 units, many of which are either rooftop mounted or
19 other types of systems. But we're really not
20 sure. And so I think that that needs some
21 adjustments and work if you wouldn't mind.

22 The units, themselves, particularly the
23 smaller units that we represent, are essentially
24 nothing more than a fan, a motor and pump
25 assembly. They're very often, at least the

1 smaller ones, are made by very small manufacturers
2 here in the United States. And there are three
3 principal manufacturers, two in Arizona and one in
4 Arkansas that are the bulk of the industry in the
5 United States for the smaller units.

6 Evaporative coolers are a very
7 acceptable alternative to central and room air
8 conditioners in low humidity environments, in the
9 southwestern and drier environments here in
10 California.

11 We believe they essentially can save
12 energy by virtue of just them being placed in
13 place of a central air conditioner.

14 Some literature that's out there
15 suggests that they can save 70 to 80 percent of
16 the energy of a comparable air conditioner,
17 central air conditioner.

18 We believe the current move to require
19 reporting is unnecessary. If this extends down to
20 the smaller types of these evaporative coolers,
21 this is very burdensome on small manufacturers to
22 report, many of who sell some small units in
23 retail.

24 And the retail environment on these is
25 shifting and changing almost constantly, as

1 evaporative coolers are pulled out and small room
2 air conditioners are put in, or vice versa,
3 depending on the areas.

4 Some of the retailers are also shifting,
5 depending on the climate, trying to stay up with
6 the fact that these smaller evaporative coolers
7 can be used in a spot environment situation, in
8 dry environments, and so the retail environment is
9 changing almost constantly.

10 So we would like to suggest that we get
11 the definition down; work on that situation so
12 that we can apply this to what it is that we think
13 you're intended to apply it. And we're not really
14 sure about that.

15 So maybe you could tell us, in fact,
16 which types of evaporative coolers you're really
17 intending here.

18 So, thank you.

19 MR. MARTIN: Well, I welcome that
20 opportunity.

21 MR. FERNSTROM: If I could make a
22 comment in response, I think it's good for us to
23 settle on the type of equipment we're looking at,
24 and propose this testing for.

25 However, our case study showed a

1 significant difference in the effectiveness of the
2 fairly large, whole-home type of evaporative
3 coolers. And we think it's important to have
4 information on the efficiency of this equipment so
5 we and consumers can differentiate in the
6 selection process between the performance of
7 really efficient equipment, and equipment that's
8 not so efficient.

9 We do that with air conditioners. We
10 think it should similarly be available for
11 evaporative coolers.

12 MR. MORRIS: Thank you, Gary. Yes,
13 actually there are a couple of manufacturers that
14 are located in the United States that are not
15 members of our association, but we can certainly
16 put you in touch with them. I think that they
17 would probably have some information available on
18 the large capacity type units, the whole house and
19 ducted system units and that type of thing.

20 I can't speak for them, but I would
21 imagine that they would make available information
22 to you on the basis of this. So, we'll be glad to
23 put you in touch with them and talk to you about
24 them.

25 MR. MARTIN: Would either of you be in a

1 position to discuss -- there are two ASHRAE
2 standards for evaporative coolers, and what the
3 relationship is, and whether we should allow both
4 of them? I don't remember the title of the other
5 one.

6 MR. RAINER: I think you're referring,
7 there's one which --

8 MR. MARTIN: They're both rather new.

9 MR. RAINER: -- the one that we see
10 there which is for direct evaporative cooling --

11 MR. MORRIS: Yes, this is standard 133-
12 2001.

13 MR. RAINER: Yeah, this is appropriate
14 for direct evaporative coolers. It also would
15 work, the test method would work for direct/
16 indirect.

17 There's another that's specifically for
18 direct/indirect and really isn't appropriate for
19 most residential applications.

20 There's also an Australian standard
21 that's very similar to 133 that uses most of the
22 same sort of set-up and actually specifies test
23 conditions.

24 133 is designed for direct -- testing of
25 direct efficacy and power levels, and is

1 appropriate for a permanently installed appliance.
2 I'm not familiar with the smaller ones, but I can
3 see that it would not work for those. But how to
4 correct the definition, whether it's by total cfm
5 or by mounting or by either permanent or -- you
6 know, that's something I think we can work out.

7 MR. MORRIS: Yeah, I think it could
8 easily, either by the mounting method, by ducting
9 versus nonducted systems, or there's also pressure
10 differentials that you can use, I think, that can
11 classify some of these units that might be able to
12 be used, as well.

13 I'm not as familiar with the larger
14 units, but I do know that we looked through this
15 test procedure and it wouldn't work for most of
16 the smaller units that we represent and that are
17 available.

18 MR. RAINER: Does AHAM represent any of
19 the larger manufacturers?

20 MR. MORRIS: No, we don't. I don't know
21 whether ARI does or not.

22 MR. RAINER: There's actually an
23 Evaporative Cooler Institute. It's a very much
24 smaller manufacturers representation.

25 MR. MARTIN: Okay, well, we will

1 certainly work with you on that one.

2 MR. MORRIS: Thank you, Michael.

3 MR. MARTIN: Are we ready for the next
4 one?

5 ASSOCIATE MEMBER ROSENFELD: Yes.

6 MR. MARTIN: Number 14, ceiling fans.

7 Ceiling fans, the non-oscillating, fixed axis fans
8 suspended from the ceiling which are used to
9 circulate air through the rotation of fan blades.
10 Ceiling fans may or may not include a light kit.

11 There are an estimated 10.8 million
12 ceiling fans in service statewide. Annual sales
13 estimated at 42,000. Average annual per unit
14 power consumption of ceiling fans in California is
15 76 kilowatt hours. And once again, with no
16 minimum efficiency level being proposed, we're
17 just proposing testing and certification
18 provisions for this equipment.

19 Number 16, whole house fans. Oh, excuse
20 me.

21 MR. HOROWITZ: When a consumer goes to
22 buy a ceiling fan now they have no idea how
23 efficient it is at moving air; how many cfm's
24 they're going to get; or how many watts the fan is
25 drawing.

1 I'd like to amend or add to the
2 direction the CEC is going that they require a
3 label on the box that tells the consumer how many
4 cfm and how many cfm per watt that fan is using.
5 This was, I believe, in the case study; might not
6 have arrived in time. And also this is the
7 direction EnergyStar has gone, as well.

8 So we'd like to see that labeling
9 requirement added.

10 MR. MARTIN: Okay, thank you. 15, whole
11 house fans. Whole house fans are high air volume
12 exhaust fans mounted in the ceiling of a residence
13 for the purpose of providing ventilation and
14 cooling.

15 There's approximately 680,000 in
16 service. Approximately 68,000 sold each year.
17 Average annual per unit energy use 280 kilowatt
18 hours. No minimum efficiency level being
19 proposed, merely requirements for testing and
20 certification.

21 Number 16, residential exhaust fans.
22 Residential exhaust fans are permanently installed
23 in bathrooms, kitchens and utility rooms, either
24 in the ceiling or wall. Their intended purpose is
25 to remove moisture, odors, cooking fumes and other

1 objectionable air from the inside of a home to the
2 outside.

3 There's approximately 10.3 million in
4 service in the state. Approximately 1.1 million
5 sold each year. Annual per unit energy
6 consumption ranges from 15 kilowatt hours to 416
7 kilowatt hours depending on duty cycle and cfm
8 rating of the fan.

9 Once again, we are suggesting provisions
10 for testing and certification, but no standard at
11 this time.

12 ASSOCIATE MEMBER ROSENFELD: And,
13 Michael, Noah's question. Are there going to be
14 labels on any of these things as proposed now? Or
15 was Noah's suggestion --

16 MR. MARTIN: As proposed --

17 ASSOCIATE MEMBER ROSENFELD: -- the
18 first labeling --

19 MR. MARTIN: As proposed now, we have no
20 labeling requirements suggested. However, he just
21 suggested one for ceiling fans. As far as I know
22 nobody's suggested them. I don't --

23 ASSOCIATE MEMBER ROSENFELD: I'm egging
24 him on to make a more general proposal, I guess.

25 MR. MARTIN: Okay.

1 MR. HOROWITZ: We'd extend the same
2 suggestion that we require the label for these
3 exhaust fans since there's a test method.

4 MR. MARTIN: Ceiling fans and exhaust
5 fans?

6 MR. HOROWITZ: That's correct.

7 ASSOCIATE MEMBER ROSENFELD: In fact, is
8 there -- once we go to the trouble of having test
9 procedures and numbers on a database, is there
10 really any reason why we couldn't consider labels
11 on -- I think there are four different packages
12 here, Michael?

13 MR. MARTIN: Well, there's evaporative
14 coolers. Of course, 25 all together here today,
15 but I think you're referring to evaporative
16 coolers --

17 ASSOCIATE MEMBER ROSENFELD: Yeah, the
18 ones where you aren't proposing standards.

19 MR. MARTIN: We could propose them for
20 evaporative coolers, ceiling fans, whole house
21 fans, residential exhaust fans and -- well, let's
22 talk about portable room cleaners when we get to
23 them.

24 ASSOCIATE MEMBER ROSENFELD: When we get
25 there.

1 MR. MORRIS: If I could, Art, on the
2 evaporative cooler situation because there is no
3 test procedure currently for the smaller type
4 evaporative coolers, we would ask that they be not
5 included in this --

6 ASSOCIATE MEMBER ROSENFELD: Sure, if
7 there's no --

8 MR. MORRIS: -- until we can --

9 ASSOCIATE MEMBER ROSENFELD: -- test
10 procedure, there's nothing we can do.

11 MR. MORRIS: Right. Thank you.

12 MR. MASSEY: Art Massey, Hunter Fan
13 Company. There's already an EPA standard for
14 ceiling fan efficiencies and EnergyStar rated
15 products. There are fans, and then there are fans
16 of all of these types.

17 Hunter, for one, does put cfm and energy
18 consumption on our packages because we make very
19 efficient fans.

20 But I suppose it would be my proposal
21 that before we go into a multiproduct labeling
22 project for the State of California, that we go
23 back and review what the EPA has done, and the
24 Department of Energy, relative to these things.

25 If an efficiency standard is required

1 for evaporative coolers, certainly the Department
2 of Energy should be involved in such a thing, I
3 would think. Or we're all going to wind up doing
4 a lot of testing and special products to ship into
5 California and those kinds of things, which add
6 cost and end up ultimately, you know, hitting the
7 consumers' pocket for additional dollars.

8 ASSOCIATE MEMBER ROSENFELD: Sure.

9 Thanks.

10 MR. MARTIN: Okay, I think we're --

11 MR. MORRIS: Can I ask a question?

12 On exhaust fans, Michael, the definition
13 of this again we don't believe applies to most of
14 the products within AHAM's jurisdiction, but we do
15 want to comment on the units which are microwave/
16 oven hood combination units.

17 We believe that these are part of
18 microwave ovens and therefore are preempted under
19 NAECA and should not be included in either the
20 regulations or reporting requirements.

21 We object to the assumption that many of
22 these exhaust fans, especially the kitchen exhaust
23 fans and over-the-range exhaust fans are used 30
24 minutes per day. We think that that's extremely
25 excessive.

1 We have no idea where that figure came
2 from. It certainly didn't come from our
3 organization or anyone else that represents the
4 over-the-range exhaust fans.

5 So we believe that that needs to be
6 relooked at again in terms of any energy savings.

7 But particularly on the microwave oven/
8 hood combinations we would suggest that the Energy
9 Commission understand that those are covered
10 product under NAECA and are not applicable for
11 either the standards or reporting requirements.

12 Thank you.

13 MR. MARTIN: I look forward to working
14 with you folks on this.

15 MR. MASSEY: As always, Michael.

16 (Laughter.)

17 MR. MARTIN: I think we have time to do
18 portable room air cleaners.

19 MR. MORRIS: This is going to be a long
20 one. We also recognize that Commissioner
21 Rosenfeld has got a conference call at 12:00.

22 ASSOCIATE MEMBER ROSENFELD: That's
23 okay, if you want to start, if you don't consider
24 me rude I'll just sneak out at three minutes to
25 12:00.

1 MR. MORRIS: We consider you essential,
2 so --

3 MR. BLEES: Why don't we just break now,
4 then.

5 MR. MORRIS: If you wouldn't mind?
6 Thank you very much.

7 MR. BLEES: Before we do, is there
8 anybody who we inadvertently passed over who wants
9 to make a comment on any appliances that have been
10 discussed up until now?

11 Okay.

12 ASSOCIATE MEMBER ROSENFELD: Ted Pope,
13 if you're going to give a little one-minute speech
14 after lunch I'd like to talk to you for a second
15 now. I mean as soon as we break for lunch.

16 MR. MARTIN: I'm sorry, I wasn't paying
17 attention. Were you speaking to me?

18 ASSOCIATE MEMBER ROSENFELD: Ted Pope is
19 going to talk about water, costs of water. And I
20 just wanted to say a word to him.

21 MR. BLEES: So should we cover anything
22 else before we break for lunch? Gary, did you
23 want to --

24 ASSOCIATE MEMBER ROSENFELD: Gary's
25 aching to say one last thing.

1 MR. FERNSTROM: I was simply going to
2 suggest that we have lunch.

3 (Laughter.)

4 MR. BLEES: So ordered. See you back
5 here at 1:00.

6 (Whereupon, at 11:53 a.m., the workshop
7 was adjourned, to reconvene at 1:00
8 p.m., this same day.)

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AFTERNOON SESSION

1:09 p.m.

MR. BLEES: Mr. Pope, you were going to address us briefly on water savings; are you prepared to do that?

MR. POPE: Can I have one more minute --
(Laughter.)

ASSOCIATE MEMBER ROSENFELD: Anytime you're ready we'll be happy to get your one-minute sermon.

So, are we going to ask Michael what's next?

MR. BLEES: Here comes Ted.

ASSOCIATE MEMBER ROSENFELD: Ted, are you ready?

MR. POPE: I am. Ted Pope, Energy Solutions. And, Commissioner Rosenfeld, I believe you asked me what the relative savings in terms of saved water and wastewater utility bills were relative to the value of saved energy.

And according to my calculations here on the dishwasher pre-rinse spray valves, on the basis of saving about 143,000 gallons of water per

1 year, an assumed rate of \$3.15 per thousand
2 gallons, that's a statewide average, that number
3 would be worth about \$452 a year, again in water
4 and wastewater savings, relative to a projected
5 energy savings of \$541. So that would, in fact,
6 cut your payback down half of what it is now.

7 ASSOCIATE MEMBER ROSENFELD: Thank you
8 very much. At the risk of repeating it, it seems
9 to me this is sort of interesting. We're still
10 stuck in a world where we say we have a payback
11 time of say a year. But by the time you put in
12 the actual cost of water statewide, you come down
13 to half a year.

14 And, of course, if you're in the L.A.
15 basin where water costs more, you may come down to
16 like a quarter of a year or something.

17 So, thank you for your calculation.

18 Michael, are you about to say something?

19 MR. MARTIN: Yes, I was. In this
20 particular case it was from a -- we started at a
21 month before we cut it down. So you mentioned a
22 year. I think you meant a month.

23 ASSOCIATE MEMBER ROSENFELD: I was just
24 being generic, but, yes, I mean it's nice to have
25 a month come down to two weeks.

1 MR. MARTIN: We're down to a couple of
2 weeks now.

3
4 ASSOCIATE MEMBER ROSENFELD: Thank you.
5 Right.

6 MR. MARTIN: It's almost as soon as the
7 pipefitter removes himself from the job that he's
8 got his money back.

9 ASSOCIATE MEMBER ROSENFELD: Very good.

10 MR. BLEES: Isn't it three days?

11 (Laughter.)

12 MR. BLEES: No, I'm serious. You know,
13 as long as we're playing around with this, let's
14 have a little fun.

15 If the added first cost is \$5 and --

16 ASSOCIATE MEMBER ROSENFELD: What page
17 are you looking at?

18 MR. BLEES: 21. And the annual energy
19 cost savings are \$541.

20 MR. POPE: I'm sorry, that may have been
21 a life cycle; I can check that.

22 MR. BLEES: I'm just looking at the
23 numbers on page 21. You know, that's a hundredth
24 of a year.

25 ASSOCIATE MEMBER ROSENFELD: Right.

1 There's a discrepancy here.

2 MR. BLEES: So, I mean that's --

3 ASSOCIATE MEMBER ROSENFELD: That's
4 nearly \$1000 a year.

5 MR. BLEES: -- that's four days.

6 MR. MARTIN: I wish I hadn't brought it
7 up now. It's certainly an incredibly short time.

8 MR. BLEES: Yeah.

9 ASSOCIATE MEMBER ROSENFELD: Well, it's
10 nice to be able to say that there are four-day
11 savings out there, Michael. We should get this
12 straight in the final story.

13 (Laughter.)

14 MR. MARTIN: I'm not ready for a press
15 release on that one.

16 ASSOCIATE MEMBER ROSENFELD: Okay.

17 UNIDENTIFIED SPEAKER: If you add water
18 it's down to two days?

19 MR. MARTIN: That was adding water.

20 MR. FERNSTROM: I can see the headlines
21 now. CEC gets into hot water.

22 (Laughter.)

23 MR. MARTIN: Okay, if my notes are right
24 we had just finished number 16 and we were ready
25 to move on to number 17, which is portable room

1 cleaners. Are we ready to continue?

2 ASSOCIATE MEMBER ROSENFELD: Yes, sir.

3 MR. MARTIN: Okay. Portable room air
4 cleaners are plug-in portable units designed to
5 clean the air in a space through filtration.

6 There are approximately 2.7 million of
7 these in service throughout California, and about
8 a quarter of a million sold each year.

9 The average annual energy consumption is
10 600 kilowatt hours per year. The proposed
11 standard is a minimum efficiency level of 2.5
12 cadr, which stands for clean air delivery rate,
13 per watt of energy consumption.

14 The annual per-unit savings based on the
15 proposed standard is 95 kWh. The statewide first
16 year savings resulting from the standard would be
17 17.25 million kWh. As no correlation was found
18 between the unit cost and the efficiency of 20
19 portable room air conditioners on the market, we
20 have determined there is no significant increase
21 in the cost for energy efficiency models.
22 Consequently we have marked this as not
23 applicable. We have a zero simple payback period.

24 And I think there's a number of people
25 who wish to speak on this. We do have written

1 comments from the Holmes Group, which you have
2 copies of. And I have more copies up here.
3 That's two sides of one page.

4 Does AHAM want to lead off on this?

5 MR. MORRIS: Oh, I'm sorry, sure.

6 MR. MARTIN: Somebody needs to.

7 MR. MORRIS: Thank you very much,
8 Michael. I'm sorry, I was just waiting for my
9 cue, and I appreciate you doing that.

10 Wayne Morris for AHAM. And a couple of
11 things that I wanted to try and bring out in
12 regard to this particular product. We're very
13 surprised by the CEC proposing regulations on
14 these products. And we found a number of errors
15 in the consultant's report, along with staff
16 estimation and whoever else contributed to the
17 case study activities that were done.

18 It's hard to put it into perspective of
19 where the largest errors were, but certainly one
20 of the largest errors is in the number of units
21 shipped per year, or the number of units that are
22 actually in circulation.

23 I recognize that some of the information
24 is based on some surveys that were taken, but we
25 honestly have to look at a number of different

1 sources to get to what the actual number of units
2 there are in the population, or saturation rate,
3 number of households that actually have them.

4 AHAM keeps the market statistics for
5 shipments of this particular product category, so
6 we think we have a pretty good idea of exactly
7 what the numbers shipped per year are. And we
8 believe that the estimation that was used of the
9 number of units that are inservice, and the number
10 of units that are shipped per year is off by
11 probably a factor of somewhere between 2.5 and 3.

12 So therefore, if you just used that
13 alone, if you don't go to any of the other
14 statistics, the payback is off by 3. The annual
15 energy usage is off by a factor of 3. Almost
16 every calculation that's up there is off.

17 And so unfortunately -- yes?

18 MR. BLEES: Excuse me, Mr. Morris. I'm
19 confused. Which figures are off by a factor of 3?

20 MR. MORRIS: Give me a couple minutes to
21 find the exact estimation, because in the case
22 study report that came out it estimated, I
23 believe, over 3 million, I believe.

24 Yeah, if you give me just a minute,
25 I'll --

1 MR. MASSEY: Actually, there were 2.7
2 million portable air cleaners, if you just look at
3 number 17. That actually ties back to the
4 original proposal that was sent out. That was
5 your estimate of what's actually in service in
6 California. We find that number to be closer to
7 1.5 million, based on industry data.

8 The number of units sold into California
9 is off by 25 to 30 percent each year. Those are
10 the types of things --

11 MR. BLEES: How would that affect cost
12 effectiveness? I mean if there's one unit sold,
13 the standard can still be cost effective.

14 MR. MASSEY: Well, we're just taking
15 them a line item at a time, not to be
16 argumentative, a line item at a time --

17 MR. MORRIS: We're taking them one at a
18 time here.

19 MR. BLEES: Okay, but I'm sorry, Mr.
20 Morris, I thought you were saying that because the
21 estimates of unit sales and the estimate of total
22 number of air cleaners in service now are in
23 error, that as a result the cost effectiveness
24 analysis was wrong. Are you saying that?

25 ASSOCIATE MEMBER ROSENFELD: Mr. Morris

1 did say that, but I don't think he meant to.

2 MR. MORRIS: No, I was referring
3 primarily to the annual energy consumption data
4 that is given, the --

5 MR. MARTIN: The statewide energy --

6 MR. MORRIS: The statewide data.

7 MR. BLEES: Okay. All right.

8 MR. MORRIS: Thank you, Gary. The other
9 information that was made available from the
10 consulting group, in particular in regard to the
11 usage of the products, also contained some errors.

12 I understand that it was based on
13 information received by AHAM of a study that was
14 done for us by a consulting group called National
15 Family Opinion, or NFO, worldwide. That is a
16 telephone interview survey.

17 And when we presented that information
18 to EnergyStar and EPA we told them at the time
19 that this is going to be extremely high because
20 when you ask consumers do you own one and they say
21 yes; and then you ask them if they use it, they
22 are going to default to, of course they use it,
23 even -- and they're going to default to much
24 higher hours when they tell you on the telephone
25 than the actual surveys that we run of units in

1 the field; information that the manufacturers have
2 available to them on the life span of the
3 products, other information.

4 It is always going to be skewed high.
5 And so we explained that to EPA when we made that
6 data available to them under the EnergyStar
7 program. Therefore, they didn't use that, except
8 in very rough general terms, in terms of looking
9 at the payback and the analysis on the EnergyStar
10 program.

11 But to now quote that as being the exact
12 number of hours that products are used, and number
13 of hours in high speed or low speed, and the
14 number of months per year is just -- it's not
15 correct. And unless somebody else has actual data
16 from consumer usage, we think it's really
17 erroneous to try and use that to show the overall
18 usage patterns of the product.

19 The other thing I would want to point
20 out --

21 MR. BLEES: What do you think it should
22 be?

23 MR. MORRIS: Considerably less than
24 that. We would be glad to make available some
25 estimations to you based on what our comparisons

1 are and the individual manufacturers. But I don't
2 have those figures today.

3 I mean we got the staff report
4 yesterday. We got the consultant's report four
5 days ago on the case study. It's a little
6 difficult to even get an airfare out here and to
7 show up in four day's time, let alone to be fully
8 prepared. So, I apologize, but it's a very
9 difficult thing to try and get these documents.

10 The --

11 MR. BLEES: Mr. Martin, when did the
12 case studies get put on the website? Do you
13 recall?

14 MR. MARTIN: I don't recall offhand, but
15 much more recently than they should have been.

16 MR. BLEES: And do you remember when the
17 staff report got on there?

18 MR. MARTIN: Not off the top of my head,
19 no.

20 MR. BLEES: Thank you.

21 MR. MORRIS: Of all the products that
22 the Energy Commission is looking at regulating,
23 this is the only product that is a health-related
24 product that I can find. I mean maybe you can --
25 you know more about these than I do in terms of

1 their overall usages; and not only speaking
2 particularly for the AHAM products.

3 But, this is a product which is greatly
4 used by families that have a range of conditions
5 and difficulties, from trying to reduce dust and
6 environmental smoke and odors and other kinds of
7 things to the household, all the way up to
8 families that have chronic conditions, lung
9 problems, allergies, asthma.

10 As you may know, recently the USEPA
11 Office of Children's Health conducted a study in
12 regard to looking at the rate of rise of asthma
13 among children. And they have published that it
14 is much greater among the poor and disadvantaged
15 populations. These populations need, and very
16 often use, an air cleaner. Especially those that
17 are located in city environments.

18 It's not a situation where they can
19 follow the EPA's general guidelines on indoor air
20 pollution that they can just open the windows. In
21 many cases they may live in an inner city
22 environment where it is either not safe, or it's
23 not appropriate because of the outdoor air
24 quality, to open the windows.

25 Air cleaners offer a very affordable

1 alternative for many of these people. And this is
2 also true that the rate, even in California, of
3 the percentage of population that still do use
4 tobacco products in their homes, is highest among
5 the disadvantaged and the poor. And in many
6 cases, inner city people.

7 So, air cleaners offer an alternative
8 for people to try and improve your air quality.
9 The estimations that were done in the case study
10 were particularly done in mind of very expensive
11 air cleaners. The average is above \$220 in price
12 of the units that they studied in looking at
13 whether they meet this proposed standard.

14 Whereas, in California we have a great
15 deal of data that shows that the average selling
16 price of air cleaners in the state is less than
17 \$100.

18 So, the consultant's report is looking
19 at very expensive units that may meet an energy
20 efficient standard of whatever the X cadr per watt
21 rating might be. Whereas, in truth, the mass
22 public is buying and using lower quality -- excuse
23 me, lower priced air cleaners. Which particularly
24 are built for smaller rooms, which is prevalent in
25 the housing of many of the people that we're

1 talking about, the people that have these
2 conditions --

3 ASSOCIATE MEMBER ROSENFELD: Can I ask
4 you a question, though? I'm sorry, I haven't seen
5 some sort of scatter diagram, but I heard Mike
6 Martin say that there was no correlation found on
7 20 products. If there's no correlation then what
8 you're saying just isn't relevant.

9 So maybe what you're saying is that if
10 you look at the lowest priced, most affordable
11 five or ten, that some correlation appears. But
12 you have to address that for me, otherwise I'm
13 getting confused.

14 MR. MORRIS: I understand, Commissioner.
15 The information that we have available to us is
16 that the scattered diagram that was used in the
17 consultant's report is really a scattering of
18 selected models, some of which don't even appear
19 in the marketplace today. There were a number of
20 models that were cited there that are not
21 available any longer.

22 But in almost all cases the units that
23 they were showing, in terms of being able to meet
24 the energy efficiency requirement, are very
25 expensive. And you can look at that, you can

1 probably see it in the chart better than you can
2 even see it in the scatter diagram.

3 I don't think it is necessarily true
4 that there is no correlation between the selling
5 price and the efficiency of the units. It
6 certainly is not true with regard to the clean air
7 delivery rate. In almost all cases in the
8 marketplace, with a very few exceptions -- and I'm
9 not prepared to really talk about individual
10 manufacturers and their product, I don't think
11 that's appropriate -- but, in general in the mass
12 retail market, which is where many of these
13 families will be shopping, there is a direct
14 correlation between price, retail price and the
15 cadr performance of the units.

16 And I think that especially for those
17 manufacturers that participate in the air cleaner
18 certification program you can find it in almost
19 all cases there is a direct correlation between
20 the performance of the unit and the price of the
21 unit in retail and in wholesale.

22 ASSOCIATE MEMBER ROSENFELD: Well, sure.
23 There could certainly be a correlation. My guess
24 is, I don't know anything -- I don't own one of
25 these things, I'm not sure if I would know it if I

1 met it in the street, but you know, poor people
2 also deserve to have better than five-year
3 payback, and they do pay electricity bills, even
4 though they may be tier one instead of tier five
5 or something.

6 This just doesn't get anywhere until we
7 have data which your staff -- which our staff and
8 yours agree on. Can we somehow or other just
9 agree that we'll get the data straight and --

10 MR. MORRIS: We'll try to do that, yeah.

11 MR. MASSEY: I just spoke with my
12 engineers before I came out and looking at not the
13 first way that -- and one thing that I should
14 point out, and the Honeywell guy is here with me,
15 we're two of the market leaders in terms of air
16 cleaner sales at retail -- is that when you start
17 adding in the dust cadr on the low speed, you're
18 going to see a significant erosion in these
19 numbers that are shown on this page.

20 Right now this calculation was giving
21 credit for high speed dust reduction, but on low
22 current draw. The second part of your proposal in
23 here recommends that AHAM rewrites AC-2 or AC-1 to
24 include a low speed dust cadr calculation.

25 When we do that, because we know that

1 what happens is the unit gets a lot less effective
2 on the lower speeds than it is on higher, that's
3 when the cost payback is going to -- and just some
4 rough figures.

5 Your assumption made the assumption
6 there was a simple payback period of zero. Just
7 in what we calculate we're going to add \$9.27 to
8 the direct cost of the product which relates to
9 almost \$30 at retail. So a \$99 air cleaner is now
10 going to \$139.

11 Replacement filters that are now \$69 are
12 going to go up a minimum of \$14 because the only
13 way we can meet the efficiency standards that
14 you're asking for will be to use certainly better
15 motors. We're going to have to have more media in
16 the filtration system to be able -- because when
17 you add in the low speed dust, you're going to see
18 a significant erosion in these figures.

19 And a large percentage of the units that
20 qualified under the way that you tested them here
21 are going to fall out when you actually have low
22 speed dust, because you just don't have an air
23 velocity sufficient enough to remove a good
24 particulate rate from the air on the low speed on
25 anybody's air cleaners, ours, Honeywell's, Blue

1 Air, anybody else.

2 MR. FERNSTROM: Art, could I interrupt
3 and ask you to help me to understand that a little
4 better? If I understand what you're saying, the
5 filter effectiveness is a function of speed and
6 the filter works better with a higher air velocity
7 going through it?

8 MR. MASSEY: The filter efficiency, and
9 I have an engineer sitting over here, he can
10 probably do a better job, but the filter
11 efficiency is a factor of the actual media
12 efficiency, the face velocity over which you move
13 air over that filter. And that directly relates
14 to cadr.

15 As you slow down the cadr, the actual
16 functional efficiency of the unit goes down with
17 it. Did I say that correctly?

18 MR. BIRDSELL: This is Walt Birdsell
19 from Kaz. We manufacture the Honeywell
20 EnviraCaire products. It's not a linear scale
21 because of what Art was mentioning about the
22 surface value of the filter and how the air is
23 pushed through. If I just take a high setting,
24 let's say I have a 1500 rpm motor. Now, the low
25 settings on ours and most of our competitive

1 units, it doesn't cut that power in half. I'm not
2 at 750 rpm. I'm somewhere around 1000 rpm to 1200
3 rpm. And the rate of reduction is drastic; it
4 could almost be 30 percent if not more, as soon as
5 we start to lower the cfm value.

6 MR. FERNSTROM: Well, you see, the thing
7 I don't understand is it would seem to me that any
8 filter's effectiveness would be improved as the
9 velocity through it were reduced, because the
10 likelihood of catching a particle would be
11 greater. It doesn't work that way, though?

12 MR. MORRIS: No.

13 MR. BIRDSELL: No, it doesn't work that
14 way, not at all. Actually you'd want to have more
15 air rushing through the filter that actually will
16 start to draw particles from the air to the filter
17 surface.

18 As soon as you slow it down the
19 particles are not now drawn from the air. It's
20 harder for the particles to be captured within the
21 filter. Thus the consumer would be actually using
22 a product that would be very inefficient for what
23 it was designed for.

24 MR. FERNSTROM: Okay, sounds like it's
25 electrostatic and not mechanical, is that why the

1 velocity --

2 MR. BIRDSELL: No. No, it's -- well,
3 the units I --

4 MR. MASSEY: Can be either one, doesn't
5 make any difference.

6 MR. BIRDSELL: The units I'm
7 specifically discussing are the ones that you
8 mentioned in the case study, and that is the hepa
9 filters. Our company uses a medical grade hepa
10 paper, which is very hard to draw through. We
11 capture particles at the 3 microns and above. So
12 it's more than just collecting dust. We're
13 collecting much more. If you read through some of
14 the literature and the side panels of our boxes, a
15 lot of the competitors are not using this type of
16 paper. They're actually using paper that has, I'm
17 not going to say not as efficient, but it's a
18 lesser quality paper.

19 So when you looked at our units in your
20 study, this is why our units didn't seem very
21 efficient from an electrical standpoint, but
22 they're very efficient in a particle-removal
23 standpoint. This is why the consumer is actually
24 purchasing the product for.

25 And if we went in and lowered and did a

1 cadr on the low speed, our units would totally
2 drop off the scale. Because at that point they're
3 very inefficient. Thus, the customer's buying
4 something that really does not work.

5 And we also did a study, because we do
6 tear down our competitive units quite often, and
7 we've looked at the Blue Air unit. And if we did
8 the same sort of motor/fan blade mechanism as Blue
9 Air does, because they're using a dc driven motor,
10 they have a power supply that they need to convert
11 from ac to dc to drive that very expensive motor.
12 The cost to the consumer with what you pulled out
13 in both Panasonic and Blue Air, the price of our
14 most expensive unit would more than likely hit the
15 consumer at a \$260 increase.

16 Also within the case study you mentioned
17 shaded pole motors versus capacitance motors. All
18 of the motors that we use in the Honeywell
19 EnviraCaire product are capacitant motors. So
20 here we're already meeting one of the requirements
21 for efficiency, but due to the paper that we use,
22 this is where the efficiency starts to be cut
23 down.

24 So we are trying to do as much as we
25 can, that's within this case study. But you see

1 when there's more factors than just electrical
2 motor standards when we look at this.

3 MR. MASSEY: I guess the objective that
4 we have as an industry is to provide great clean
5 air delivery rate at a reasonable price to
6 consumers so they can get relief from their
7 allergy symptoms. And at the end of the day we're
8 not sure that the consumer cares if they have to
9 pay, you know, -- I mean obviously we want to
10 provide great air cleaning performance --

11 ASSOCIATE MEMBER ROSENFELD: But our
12 standards are not supposed to be on what the
13 consumer cares, it's supposed to be on a good
14 payback time. Consumers pay first cost and
15 consumers pay electricity bills, and they ought to
16 be optimized.

17 MR. MASSEY: Sure. That's why I wanted
18 to get into these numbers. I ran some numbers
19 based on the cost at retail, just the cost at
20 retail. The payback to make our air cleaner, or
21 anybody's air cleaner that's going to fall out,
22 meet the standard you proposed is not nothing;
23 it's three and a half years payback. And that's
24 just the air cleaner.

25 Replacement filters will have to have

1 more media, which gives you more surface area to
2 move less air across, which increases the cost of
3 those. They're going to go up 14 bucks.

4 So at the end of the day when you run up
5 the numbers the energy you're going to save
6 amounts to \$67. It's going to cost you about \$74
7 extra at retail and replacement filters to buy the
8 air cleaner. And your cost payback goes to 10.9
9 years.

10 MR. BIRDSELL: There is also, if we
11 looked at the total payback to the consumer, if we
12 reduce the efficiency of the air cleaning device,
13 it takes that cost burden and moves it away from
14 paying for energy to possibly paying for more
15 medical bills. Because these have proven by the
16 American Lung Association that --

17 ASSOCIATE MEMBER ROSENFELD: No, wait a
18 minute, let's not redesign it and, you know, --
19 we're trying to do those things which have
20 reasonable payback times. We're not discussing
21 killing people. Go ahead.

22 MR. HOROWITZ: Gary, did you have
23 something?

24 MR. FERNSTROM: Yeah. Let me just make
25 an editorial comment about our objective. Our

1 objective here is to get more filtered air for a
2 lower energy use. It's not to get more air or a
3 less filtration efficacy.

4 It's the relationship between cadr,
5 which is what we presume to be clean air coming
6 out of the filter, at a certain specified level of
7 cleanliness versus the energy.

8 So, we're, in fact, trying to improve
9 the performance relative to the amount of energy
10 used. And that should benefit people that have
11 medical needs for these products.

12 MR. MASSEY: But that's all making the
13 assumption, and your whole premise here makes the
14 assumption that you are getting as good a capture
15 rate on the dust particle on low or cadr, as you
16 are on high. And that is totally incorrect.

17 And you really need to understand the
18 low speed cadr and put that into the equation.
19 Watch all these units fall out of hitting this
20 number that you targeted. And then you'll see
21 what we're talking about.

22 Which is why we dropped everything we
23 were doing and flew out here so that you guys
24 would get the straight scoop on what's really
25 going on here from a mechanical standpoint. We

1 didn't --

2 MR. FERNSTROM: Okay, and that's why I
3 asked you to elaborate on that, as well.

4 MR. HOROWITZ: Okay. I was going to
5 remain quiet here, but there was one thing that I
6 need to respectfully challenge. It appears you
7 have a lot of data, and I know there wasn't much
8 time to prepare for the meeting, but I think we
9 could have a much better informed dialogue if you
10 could provide some real data in terms of the
11 incremental costs here.

12 And I heard a number thrown around, \$9,
13 which may or may not be right. But where I'm
14 having a hard time is how that becomes \$30 to the
15 consumer. That's about a 300 percent markup. And
16 I know you're not going to be able to sell product
17 at WalMart.

18 MR. MASSEY: No, it's not. It's a 40
19 percent markup. And as a manufacturer who imports
20 products, I deserve to make a profit. The
21 retailers want 50 and 55 points on the product
22 they sell. So when I mark -- I've got to make, if
23 I add \$10 worth of cost to the product and I just
24 take a hit, I can't just pass \$10 along, because
25 my margin goes down the dumper.

1 And the retailer is going to add his
2 margin onto it, too. So when you add \$10 to cost,
3 you're essentially adding \$30 to \$40 at retail
4 price point to the consumer. It's just pure
5 finance.

6 MR. HOROWITZ: Okay, we can talk to
7 retailers and debate this afterwards, but I'm
8 trying to put on record that I think that markup
9 is higher than in the real world.

10 MR. MASSEY: Well, it isn't. Because,
11 it isn't.

12 MR. HOROWITZ: Okay, well, we
13 respectfully disagree. And I just want to get
14 that on the record.

15 And I'd love to see some of the data in
16 terms of hours of operation, because that does
17 drive the payback period. And if the consultants
18 have got it wrong, and you have better data, let's
19 see it and then we can keep talking.

20 MR. MASSEY: Well, I used your numbers
21 in hours of operation to calculate what I
22 calculated. And I came up with instead of 17.25
23 million in savings, it's a little over 10 million.
24 I accepted your \$69 savings per unit per year.

25 When I come down here at the bottom I

1 look at -- I'm seeing .115 and I'm seeing, when I
2 take 69 and multiply it times 1.5, I get 7.94, not
3 10.93, which is \$7.94 per unit.

4 So, when I do the math I'm coming up
5 with a 3.5 year payback. And when I do the math
6 over the replacement filters and all the other
7 things, I'm coming up with ten years. That's not
8 a wise investment on the part of the consumer.
9 Energy savings, set aside, sir. I understand the
10 need to save energy, but we're also trying to
11 provide a real health benefit to people that are
12 really sick.

13 ASSOCIATE MEMBER ROSENFELD: Some of the
14 problem seems to be that I think in some way you
15 must be not happy with the metric, which is cadr.
16 Is that the problem?

17 MR. MASSEY: No. I think cadr is the
18 only way to evaluate the real performance of an
19 air cleaner.

20 ASSOCIATE MEMBER ROSENFELD: But then we
21 seem to both be wanting the consumer to have the
22 same amount of fresh air.

23 MR. MORRIS: Well, there's two things
24 here involved, Mr. Rosenfeld. One is that you
25 have chosen to go with a cadr measurement using

1 dust, which we think is incorrect.

2 AHAM has 20-plus years of experience
3 with the cadr program, and we have consistently
4 used, because it has been verified by the people
5 at the Federal Trade Commission and by the
6 Consumer Products Safety Commission, as well as
7 EPA, that we should be using for room-size
8 calculations, which is the unit that is being used
9 for the consumer to judge the proper air cleaner
10 to buy, should be based on smoke.

11 Now, this is not because we think that
12 there is large amounts of tobacco smoke in use.
13 That's not the issue. The issue is the particle
14 size. The particle size for tobacco smoke is .3
15 to 1 micron. Whereas the dust particle is between
16 1 and 5 microns.

17 Most of the particles that consumers are
18 more concerned about, particularly the under 2.5
19 pm unit, which is responsible for many of the
20 health and lung problems that people are facing,
21 are really much greater performance are judged by
22 using engineering tobacco smoke, or ETS, at the
23 ratio of .3 to 1 micron, rather than using dust,
24 which is representative of a particle that
25 essentially falls in the environment.

1 It is certainly available; there's no
2 question. People are not necessarily as acutely
3 affected by the dust situation as they are by the
4 smaller particles, which are, I guess you would
5 call it surrogated by the small particle that we
6 use in the test chamber of the .3 to 1 micron
7 range of units. That's one thing that we find in
8 error in this situation.

9 The other aspect of this is that much of
10 the information that is based here is based on
11 using a sort of a remanufactured test procedure of
12 the EPA EnergyStar procedure, and then adding in
13 this idea of high speed and low speed.

14 Art mentioned the situation with low
15 speed, and Walt, and I think they're absolutely
16 right from my experience in doing this. That the
17 assumptions being made here is that the
18 performance will be about half. That supposedly
19 air flow at low is about half of what it is at
20 high. That's not necessarily true.

21 ASSOCIATE MEMBER ROSENFELD: Hold on.
22 This is great, I'm beginning to understand.
23 You've been very helpful. Can you just stop for
24 dummies like me, and say how the test procedure,
25 is it supposed to be part of the time low speed

1 and part of the time high speed? I just don't
2 know.

3 MR. MORRIS: No. We are encouraging
4 consumers to use their air cleaners on high speed.
5 And, in fact, we just recently released a new
6 standard, which is ACII standard, which allows for
7 testing and measurement of the sound measurement
8 of air cleaners, which will assist consumers in
9 understanding and evaluating the proper products
10 that they're using in their home environment.

11 But we don't recommend that consumers
12 use air cleaners on a low speed. And the reason
13 for that is that --

14 ASSOCIATE MEMBER ROSENFELD: But does
15 the test procedure assume a low speed? I just
16 don't --

17 MR. MORRIS: No, it doesn't. It assumes
18 that all units are tested and used on high speed.

19 ASSOCIATE MEMBER ROSENFELD: So where
20 does this problem of the low speed come in? I'm
21 sorry to be confused.

22 MR. MORRIS: I don't know.

23 ASSOCIATE MEMBER ROSENFELD: Ted.

24 MR. POPE: If I could explain, I think
25 we're spending a lot of time on what I think is a

1 misunderstanding. What the case meant to
2 articulate, and I apologize if it didn't, is that
3 right now the current AHAM test procedure only
4 tests at high speed.

5 However, the AHAM consultants' data
6 shows a tremendous amount of usage at not high
7 speed, at medium and low speeds. So, we propose,
8 right now the listed cadr measurements, the
9 efficacy measurements that AHAM lists are only
10 available at high speed because that's the only
11 way the test procedure is done.

12 And our concern, I agree with Wayne on
13 that one, but our concern was since there's a lot
14 of usage at the lower speed, and we, the
15 consultants doing the research, had no idea what
16 the real energy use was at low speed, so we said
17 in this proceeding let's do a metric based only on
18 high speed cadr performance. And then we'll use
19 two different power draw assumptions, one at high
20 and one at low, you know, half and half mixture.

21 So, we're trying to get at the energy
22 use relative to the full speed cadr performance.
23 But because we don't know, in our shop, how cadr
24 performance varies with speed setting, we proposed
25 what should happen is the AHAM test procedure

1 should add a second test series of tests at low
2 speed.

3 And then when that data's been collected
4 over the next few years, we all sit down and in a
5 future proceeding establish a new standard. Not
6 the 2.7 we're proposing now. So I think these
7 issues of safety and all that go away, because
8 we're not saying you have to meet 2.7 using two
9 different cadr levels at the two speeds. But that
10 you would recalculate this new metric at that
11 time, obviously paying attention to these health
12 issues.

13 So, I think that takes care of a lot of
14 this concern because --

15 MR. MORRIS: Well, no, respectfully, no
16 I don't think it does. And from a number of
17 standpoints I don't think it really does meet the
18 situation.

19 Trying to find out what, and define low
20 speed, I think is relatively impossible. It's
21 like, okay, well, what's your speed limit in
22 California on a road; well, what do most people
23 drive at. I think that you can't come up with
24 some number that automatically assumes that kind
25 of situation. What's low speed? It could be

1 anywhere.

2 And I don't believe that that's an
3 appropriate situation. It begs, and then causes,
4 consumers to start thinking that they can get the
5 same benefits by running the unit at low speed,
6 and they can't. And we don't want to even
7 encourage that situation.

8 The minute we start talking about some
9 efficiency level, that high and low, we've
10 encouraged them to do something that is wrong for
11 them.

12 ASSOCIATE MEMBER ROSENFELD: Wayne, as I
13 understand it we're not discussing an efficiency
14 except on high speed. As far as I understand from
15 Ted's remark the low speed entered only in some
16 sort of estimate, which is almost irrelevant, of
17 how many billions of kilowatt hours we're going to
18 save.

19 But the --

20 MR. MORRIS: No, it doesn't.

21 ASSOCIATE MEMBER ROSENFELD: -- the
22 payback time was based on high speed, I think he
23 just told us.

24 MR. MORRIS: At the current time it is
25 based on a measurement of an average of the energy

1 usage at both high and low. That's what the
2 estimation is I saw in the chart.

3 MR. POPE: That is correct, but --

4 MR. MORRIS: -- high, but it is energy
5 usage at an average of high and low.

6 MR. POPE: And that's our attempt to be
7 as realistic as possible. I think the industry
8 would have been screaming had we projected full
9 speed operation at all times. I think I'd be
10 assassinated for that.

11 So I think we made a serious attempt to
12 be realistic. And I have to respond to the
13 question about no low speed. I understand some
14 projects may have auto speed functions, and just
15 like in any appliance when you have auto sensing,
16 or onboard intelligence, it does become more
17 complicated.

18 But generally the proposition is you
19 turn the machine on its low setting. I don't see
20 what's so confusing about that. You turn off any
21 other features that are optional. So that would
22 be your low setting, and your high setting is the
23 one that says high.

24 If I can, I'd like to address a few
25 other comments. I agree with Wayne that the

1 research conducted by the consultant, hard to
2 believe that all the numbers are solid. They
3 predicted that -- their research showed that 33
4 percent of households have air cleaners. And, in
5 fact, our analysis is based on half that
6 penetration. We assume that 15 percent of
7 households in California have an air cleaner.

8 All I have is overhead set of slides
9 from this research, so I don't know all the
10 assumptions underneath, but I want to be clear, we
11 did not base our analysis on the most aggressive
12 data provided to us from the industry channels.

13 Also there may be some definitional
14 issues that we didn't understand doing the
15 analysis, but in terms of state and national
16 sales, we took the data straight from Appliance
17 Magazine for their portable room air cleaner. And
18 perhaps that data is polluted with the product
19 class we weren't aware about. So I'll be happy to
20 talk with AHAM about that, and we can rescale
21 those numbers.

22 But, again, we took 15 percent of total
23 national sales and presumed that was the sales
24 level into California. The reason we went with 15
25 percent instead of 12, which is the proportion

1 population California is based on, you know, the
2 increased health consciousness and the lower air
3 quality in California, as a whole.

4 Also, something we didn't do that this
5 study suggests is that it had a significant
6 percentage of households having two air cleaners.
7 We completely ignored that, and again stuck with
8 the 15 percent assumption.

9 Now, we're certainly open to data on
10 life span of the air cleaners; and if we
11 overstated that, that would exaggerate the
12 estimate fleet inservice in California. I'd love
13 to get some good data on that.

14 A couple other things I'd like to
15 address. I may be missing something on the --
16 something that these gentlemen here are referring
17 to in terms of efficacy, but our standard, the
18 metric we propose is cadr per watt. So, when you
19 start talking about requiring more energy to push
20 air through a better filter, unless he's talking
21 about efficacy at certain micron sizes of
22 particles, we already account for that in the
23 metric. It's cadr per kilowatt -- cadr per watt,
24 excuse me, --

25 ASSOCIATE MEMBER ROSENFELD: Mr. Pope,

1 I'm a little confused here. Wayne Morris has made
2 a pretty impressive point. He says that
3 healthwise we should be paying more attention to
4 the smoke-sized small particles than we are to
5 dust-sized particles. And that resonates with me.
6 But, --

7 MR. POPE: It made sense to us -- I'm
8 sorry to interrupt, but we actually ran the case
9 analysis that way. And at the last minute we
10 found out that EnergyStar had chosen dust instead.
11 And so, I guess falsely, we presumed that that was
12 the industry preference.

13 So in the last, you know, we started
14 this analysis two years ago, and the last couple
15 weeks we converted over from a smoke analysis to a
16 dust analysis. And --

17 MR. MASSEY: EnergyStar did what they
18 did against serious objections from the whole air
19 cleaner industry.

20 MR. POPE: Okay, well, that was
21 unfortunate on my part for --

22 MR. MORRIS: Well, our posting on the
23 EPA website shows our letter and submission that
24 we did on behalf of the industry, and a number of
25 other letters that encouraged EPA to continue to

1 use smoke rather than to cause confusion in the
2 marketplace, since smoke is used as the official
3 designation for room size calculations that's been
4 verified and approved by the Federal Trade
5 Commission.

6 And they, for want -- I don't know what
7 reason, they decided to go with dust, which we
8 think is absolutely wrong. But they did it
9 anyway. And that's -- they walk their own mile.

10 ASSOCIATE MEMBER ROSENFELD: Well, let
11 me get this straight. I asked you a few minutes
12 ago whether you were, in fact, happy with cadr as
13 a metric. And to my amazement you said yes.

14 MR. MASSEY: I am.

15 ASSOCIATE MEMBER ROSENFELD: But cadr
16 assumes dust sized particles.

17 MR. MASSEY: No, cadr -- cadr measures,
18 I mean we measure dust, pollen and second-hand
19 smoke reduction in the room environment. But all
20 of the room size and square footage nomenclature
21 that's put on air cleaners is based on second-hand
22 smoke. And that is the accepted UL, FDA, EPA, who
23 else, Wayne? FTC. Everybody accepts the cadr
24 certification program ACI as the standard for air
25 cleaner performance, including room size

1 calculation.

2 MR. MORRIS: Now, when you look at the
3 packaging of a --

4 MR. MASSEY: Confusing issue, isn't it?

5 MR. MORRIS: I'm afraid it is, yeah.

6 ASSOCIATE MEMBER ROSENFELD: No, but,
7 I'm sorry, I thought somebody just said that over
8 your objections EPA used dust sized particles.

9 MR. MORRIS: That's right, they did --

10 MR. MASSEY: They did.

11 MR. MORRIS: -- for their program, they
12 are measuring dust cadr per watt.

13 ASSOCIATE MEMBER ROSENFELD: Okay, so
14 there are two cadr's around.

15 MR. MORRIS: Three.

16 ASSOCIATE MEMBER ROSENFELD: Don't tell
17 me that there are --

18 MR. POPE: It may be helpful to
19 understand the AHAM director, it lists each air
20 cleaner, and there are three cadr readings,
21 there's three categories, dust, smoke and pollen.
22 And they provide numbers on each. Some products
23 have the same cadr reading across all three
24 particle types. And others have variability. We
25 haven't been able to discern a strict correlation.

1 MR. MORRIS: I think you need to go back
2 and look at that one, Ted. Respectfully, there
3 are virtually no air cleaners that have all the
4 same. I mean they may be -- when you say the
5 same, they may be within five or ten points or
6 something like that, but there's going to be a
7 difference.

8 MR. MASSEY: Well, really there are some
9 that are listed that way, but it's because we make
10 them list that way. We very seldom, because of
11 our own internal checking procedure on
12 performance, we very seldom list an air cleaner at
13 its top cadr performance, either. Because we
14 mandatorily go back and go through re-rate on half
15 of our models every other year to make sure that
16 nobody's cheating the monkey here on what the
17 cleaner is really doing.

18 So, we leave ourselves some cushion in
19 there, plus we also like to change the air in a
20 room six times per hour. And at the max cadr you
21 may be only changing that air five times. So, we
22 derate to make it six air changes per hour because
23 that's a good turnover rate, and again, good
24 efficacy in the air cleaning.

25 I said before, it's a complicated issue.

1 And I understand it's confusing. It was confusing
2 to me when I came into the business seven years
3 ago.

4 I'm the Chairman of the Air Cleaner
5 Council at AHAM in Washington. You asked me if I
6 support the program. I am probably, and Wayne
7 will tell you this, the most avid supporter of the
8 clean air delivery rate program as a real measure
9 of air cleaner performance.

10 And frankly, it's very simple, I mean
11 it's complicated mathematically and all that
12 stuff, but you take an air cleaner and you put it
13 in a 12-by-12-by-8 foot room, squirt a bunch of
14 stuff in there and turn the air cleaner on high
15 and measure how much it removes over time. There
16 is no basically simpler way to evaluate the
17 efficacy of an air cleaner.

18 That clean air delivery rate on low is
19 going to be probably less than 50 percent of what
20 it is on high because of the mechanics of the air
21 flow filtration process. It's just that simple.

22 MR. FERNSTROM: Well, for sure the clean
23 air delivery rate on low or part-speed is going to
24 be less than it is on high. But the energy use is
25 not as much less?

1 MR. MASSEY: That's correct.

2 MR. FERNSTROM: It doesn't go down
3 proportionately. So I have one of these things,
4 I'm sorry it's a Honeywell one and not a Hunter
5 one. But I run it most of the time on low speed
6 thinking that I'm getting more clean air for less
7 energy. And you're both saying I'm wrong.

8 MR. POPE: You should read the package.
9 The package says specifically run the unit on high
10 speed. That's what it says. It says the cadr is
11 measured on high speed. It tells you that right
12 on the AMC --

13 MR. FERNSTROM: Well, I don't doubt
14 that --

15 MR. MASSEY: Are you an allergy
16 sufferer? Just let me ask you personally, are you
17 an allergy -- do you suffer from allergies?

18 MR. FERNSTROM: Well, everybody does to
19 one extent or another, so --

20 MR. MASSEY: But you're not a serious
21 allergy sufferer?

22 MR. FERNSTROM: That's correct.

23 MR. MASSEY: I run the air cleaners in
24 my home on medium or low all the time, too, but
25 we're not allergy sufferers. If I was an allergy

1 sufferer -- all I'm really trying to capture is
2 large particles of stuff, pet hair mostly because
3 we have cats and it does a really good job at
4 that.

5 But that stuff is as big as this pen.
6 We're talking particles that are three-thousandths
7 the diameter of a human hair, that's how small
8 we're talking about.

9 Your nose and your respiratory system
10 will catch the big stuff. It won't catch the
11 little stuff, and that's what causes your lungs to
12 malfunction and give you serious allergy symptoms.

13 ASSOCIATE MEMBER ROSENFELD: This seems
14 to be more an issue of how you guys label your
15 boxes, and I don't want to get into that. I
16 suspect --

17 MR. MASSEY: Well, he was asking a
18 question, I just tried to answer it.

19 MR. MORRIS: It is an important matter
20 and I do think that there's a couple of other
21 things that we need to touch on, too. One of the
22 other items that's very important to our industry
23 right now is that we've just agreed, somewhat
24 reluctantly, and on the basis of what we just
25 talked about, but agreed to a program with the EPA

1 EnergyStar on an EnergyStar program 4 room air
2 cleaners.

3 This program is being kicked off
4 essentially this month. They've been having some
5 fits and starts getting it moving, and they
6 finally released the final packaging art work and
7 size configurations.

8 But this is a program which really has
9 not had an opportunity to even get started to see
10 what it will do within the marketplace. We
11 definitely think that the Energy Commission here
12 in California should hold off on any activities
13 and rulemaking and regulations on air cleaners
14 until the EnergyStar program has had sufficient
15 time, at least two or three years, to sort out
16 where are the units; how are they being marketed;
17 what is the case; has it, in fact, affected the
18 development of units; the energy efficiency; has
19 it done some of the things that, in fact, Ted and
20 Michael mentioned, which is can we begin to see a
21 distribution of units by cadr per watt by dollar,
22 or some configuration of that kind of thing.

23 It took us about ten years in the
24 marketplace to get to a place between 1987 and
25 1997 of seeing the cadr program transform what

1 was, at one time in the early and mid 1980s, --
2 because I was a marketing manager for a company
3 that made air cleaners in that time period, and I
4 know it well -- at that time period there was
5 almost no correlation between even performance and
6 dollars. There were high performing units at low
7 dollars, and low performing units at high dollars.

8 That has now structured itself, with a
9 couple of exceptions, that's structured itself in
10 the marketplace to now essentially you can look at
11 almost an exact scale of cadr per dollar.

12 That same kind of thing, I think, will
13 take place over some period of time with the
14 program that EPA has. Even though they're running
15 it on dust, and we don't agree with that, it is
16 somewhat similar. It's erroneous in some manner,
17 and technically we object to it, but it will, at
18 least, begin to transform the industry. We would
19 ask that you seriously consider that.

20 The other thing that I think that you're
21 beginning to look at is this idea of additional
22 testing and reporting of information, which is
23 very expensive to our industry. The cost of
24 running one test at a different speed, for
25 instance, such as you suggested, at low speed,

1 whatever that may be, is an extremely expensive
2 situation to our industry.

3 Each test of getting a cadr number
4 involves actually three tests, because you have to
5 average the comparison to get a good statistical
6 basis for the number.

7 Those combined will, across our
8 industry, cost somewhere between \$500,000 and
9 \$750,000 per year to run the tests at additional
10 speed. That's an extremely expensive situation to
11 many of these smaller manufacturers that they are
12 going to eventually have to pass on. That was not
13 figured in, as much as we can see that was not
14 considered in the cost of looking at the payback
15 analysis or the cost to the manufacturer.

16 The other situation is we think that --
17 sure --

18 MR. BLEES: Mr. Morris, that's \$500,000
19 per what?

20 MR. MORRIS: Well, we would say across
21 the, about 200 to 250 models that are in our
22 program.

23 MR. BLEES: That the total expenditure
24 by all manufacturers is \$500,000?

25 MR. MORRIS: Yes, between 500 and 750 --

1 MR. BLEES: That's a dollar --

2 MR. MORRIS: -- per year.

3 MR. BLEES: How many are sold?

4 MR. MORRIS: No.

5 MR. BLEES: How many are sold in the
6 country?

7 MR. MASSEY: About 3 million.

8 MR. MORRIS: No, no, no, --

9 MR. BLEES: Okay, that's ten cents a
10 unit. I mean -- or 25 cents -- it's less than \$1
11 a unit.

12 MR. MORRIS: Unfortunately it doesn't
13 work quite as easily as that, or at least I
14 haven't see it that, because you are talking about
15 the cost that is a reflective of, in some cases,
16 some of the units which are very high dollar
17 value, but are very low in selling volume. So, I
18 don't think it works quite that way.

19 ASSOCIATE MEMBER ROSENFELD: Well, but I
20 think you shouldn't pursue this argument. You're
21 going to get -- because Jonathan left out the fact
22 that once you do the test it's good for ten years,
23 so you're going to get down to 10 cents a unit.
24 And I would drop it, if I were you.

25 MR. MORRIS: No, I respectfully don't

1 agree. But, okay. The other situation we would
2 respectfully add is the cost that has been pursued
3 in terms of the calculations of the increases for
4 the units we think is extremely low. The balance,
5 Art mentioned his figures; we have some figures
6 from some of the other manufacturers that show
7 that the cost increase would be between 30 and 40
8 percent increase in order to reach the type of
9 values that you're looking at of 2.5 to 2.7 cadr
10 per watt.

11 The whole program is, really it would be
12 an extreme upset to our industry. And we would
13 encourage you all to give the EnergyStar program
14 some time to seriously look at the payback
15 analysis and some of the other technical analysis,
16 again.

17 MR. BLEES: How can you do EnergyStar if
18 you're not going to test? I mean I don't -- I'm
19 completely failing to understand. How can a
20 program of testing and reporting data cost -- that
21 California might begin -- cost so much more money
22 than EnergyStar, which requires testing and
23 reporting?

24 MR. MASSEY: Because EnergyStar already
25 uses a number that is done in our normal

1 certification testing. They're using the high
2 speed dust cadr to do their calculations.

3 You're asking us, going forward, to do
4 an additional test, which basically doubles our
5 cost. Which is part of that money that we're not
6 supposed to make. I thought I'd say that to this
7 guy --

8 MR. BLEES: Well, obviously there's some
9 details, there's some disagreement. Mr. Pope has
10 already acknowledged that he wants to at least
11 revisit the smoke versus dust issue. And then
12 there may be things to be worked out about, you
13 know, whether some average low and high speed is
14 appropriate, or whether high speed only.

15 How can -- it seems to me -- this has
16 been a very useful dialogue. I think we've all
17 learned something and we've highlighted areas
18 where there's disagreement and where there's
19 uncertainty.

20 This dialogue needs to go on further.
21 How can that be done? I mean, can you guys have a
22 conference call a week from now? I mean, you
23 know, we certainly don't want to pull the east
24 coast guys back here in person if we can help it.
25 Have you got any ideas, Michael? Anybody?

1 MR. MARTIN: I think staff could
2 certainly help make sure that there's
3 communication that started today with this -- is
4 very helpful today -- continues till we get a lot
5 of the differences resolved. And I undertake so
6 to do.

7 ASSOCIATE MEMBER ROSENFELD: You have
8 two people behind you, Michael, who also want
9 to --

10 MR. POPE: Yeah, I just real quick
11 wanted to respond to a couple of comments. I'm
12 always accused of selectively picking data points.
13 I do want to be clean how did we pick this data
14 set.

15 We had a sample of 23. It was based on
16 a Consumer Reports article. And then my staff
17 went online and just surfed the web and went to
18 the major manufacturers and collected data from
19 products for which we could collect both high and
20 low power ratings and the cadr ratings.

21 So, we needed to have a variety of
22 different pieces of information for each product
23 to include in the sample. And that was the sum
24 total of the selection process.

25 So, perhaps it's biased in the wrong

1 size. We'll look at that. What we need is good
2 data from the manufacturers. We've collected what
3 was available in the public marketplace, and
4 that's the basis of these diagrams.

5 And, again, I want to reiterate that the
6 level we chose was set at a point where I think at
7 least 50 percent of the units for which we
8 collected data would pass at no problem. So this
9 is not something where every product has to be
10 retooled.

11 Again, more complete data from the
12 manufacturers would certainly help us do a better
13 job of finding a level that makes sense.

14 And, again, I think it's really
15 important that a lot of the objections I heard
16 today were to, I think, an understanding of what
17 the future standard might be, but again, the
18 current ones proposed now is based on only high
19 speed cadr. And therefore, I don't see how one
20 can make any claims about health impacts,
21 something like that.

22 And to reiterate one more time, the
23 proposed future standard, even if it wasn't
24 articulated well, is that you build a new metric
25 at that time based on what the scattered shot

1 looks like when you start testing the cadr at the
2 low speed setting.

3 Thanks.

4 MR. MORRIS: Art and Jonathan, this is
5 Wayne Morris -- okay, please.

6 MR. HOROWITZ: I just want to echo what
7 Ted said and what Commissioner Rosenfeld started
8 the whole dialogue here. This --

9 ASSOCIATE MEMBER ROSENFELD: Sorry about
10 that.

11 MR. HOROWITZ: No, I --

12 (Laughter.)

13 MR. HOROWITZ: -- I think you're at the
14 right place. This was -- the consultant's work
15 was based on 20 data points. You're the industry;
16 you have the data. If there's more data, let's
17 see it and we can get to the truth of whether or
18 not cadr per watt comes at a cost increment or
19 not, and what that is. And you're very good,
20 through your trade association, at sanitizing the
21 data.

22 Let's gather that data and then Michael
23 or someone else could facilitate a conference
24 call. And then I think we could really get to the
25 issues. So I'm imploring you to provide data and

1 we'll work with you.

2 MR. MORRIS: Ted, I guess I still have a
3 problem with something that you said, because on
4 page 112 of the staff presentation that was made
5 it says, "portable room air cleaner - ratio of the
6 clean air delivery rate for dust to the average
7 power of high and low power settings for portable
8 room air cleaners shall be not less than 2.7 cadr
9 per watt where cadr is measured at only, at full
10 speed setting, and where the power is determined
11 by an average of high and low speed settings."

12 I'm having trouble with understanding
13 you saying that it's only measured at high.

14 MR. POPE: The cadr is only measured at
15 high.

16 MR. MORRIS: Yes.

17 MR. POPE: That's my point. So we
18 aren't able to look at cadr at low speed, and
19 that's the area you're all worried about health
20 impacts and ratios and performance to speed, so we
21 had to build a metric based on the data that was
22 available. And the only data available was high
23 speed cadr, because that's what's in the test
24 procedure.

25 So, we actually tried to reflect the

1 reality of usage in the state by saying roughly
2 half at high speed, roughly half at low. And in
3 fact, that number is -- never mind, that's how
4 it's set up there, so. That was an attempt to
5 lower the projected energy use.

6 And I want to be clear that this metric
7 is set up in a way that this is not going to, in
8 any way, recommend to customers they don't use the
9 thing at high speed. If that's the way it works
10 best, I'd support the industry in that.

11 All we have here is a metric; it's just
12 a number, cadr per watt. And I just don't see how
13 a customer could look at that and say, gosh, I'd
14 better use this on low speed. I just don't think
15 that's a realistic market effect.

16 MR. MORRIS: Well, it will. I mean --

17 MR. MASSEY: I'm sorry, I just have one
18 final comment, then, Wayne, you can have it.

19 Another thing that we need to come to
20 realize is that we are targeting people who suffer
21 from allergies. We know that they're in lower
22 income; they're less able to afford products. A
23 lot of times they're not covered by insurance and
24 medication, and an air cleaner is a good way to
25 get some measure of relief from your allergy

1 symptoms.

2 When we talk about changing motors and
3 stepping up motors and going to more media, the
4 impact on a high-priced air cleaner is one thing;
5 you also have a significant impact to a low-priced
6 air cleaner. And that's an exponential
7 relationship because the motor that's in the low-
8 cost air cleaner is also a good motor with a five-
9 year warranty. And it's going to cost almost as
10 much as the one that's in the big air cleaner.

11 ASSOCIATE MEMBER ROSENFELD: Art, I
12 think I invited you --

13 MR. MASSEY: So, your lower priced
14 product is going to be negatively impacted even
15 more. I'm sorry?

16 ASSOCIATE MEMBER ROSENFELD: I think I
17 invited you, at the beginning, to select
18 affordable units and do some analysis on that. I
19 said that an hour ago.

20 MR. MASSEY: Okay. I'm just --

21 MR. MORRIS: And we'd be glad to. And I
22 think that's another point that we would like to
23 raise. The first time that we found out about
24 this situation with regard to the staff
25 considering doing room air cleaners was

1 essentially when we saw the posting of this
2 meeting on the web about two weeks ago.

3 With a full blown analysis having
4 already been done, without considering or even
5 consulting with us.

6 We've had a history with AHAM of
7 cooperating with not on the California Energy
8 Commission, but with the U.S. Department of Energy
9 for many many years. When I was first brought on
10 staff in 1994 my job was to help with technical
11 analysis. And we've done that, consistently made
12 available information at different levels.

13 Whenever there was a rulemaking
14 situation that was going on, we've made available
15 cost information; we've made available cost at
16 different levels of energy efficiency. We were
17 never asked.

18 And so I think that, you know,
19 respectfully I understand that you all have to
20 move ahead. I understand the speed and I
21 understand the urgency of energy efficiency here
22 in California. I'm very sensitive to that.

23 But I also think that there needs to be
24 a better way on all of these type of situations of
25 working with industry earlier, and to allow us to

1 supply some of the information, rather than have
2 to come here and in an unfortunately somewhat
3 confrontational way, try to say the data is wrong.

4 It would be much better for somebody to
5 call us up at some point in time, be it April or
6 whatever, and say, we're thinking about doing
7 this. Would you help us, supply information. I
8 don't know why we wouldn't have done that.

9 (Parties speaking simultaneously.)

10 MR. MORRIS: -- manufacturers, but we've
11 always done this in the past.

12 MR. POPE: Didn't you comment on the
13 proposal about eight months ago?

14 MR. MORRIS: We did comment on the
15 proposal eight months ago. We supplied some
16 information at that time. We were assured I guess
17 by staff that based on some of the information
18 that portable room air cleaners were not under
19 consideration again. That's why we didn't know
20 that they were undergoing another staff analysis.

21 MR. POPE: I've been talking to your
22 test procedure folks on and off for the last eight
23 months. I'm surprised that conclusion was drawn.

24 ASSOCIATE MEMBER ROSENFELD: Well, there
25 seems to be a miscommunication here.

1 MR. MARTIN: (inaudible).

2 ASSOCIATE MEMBER ROSENFELD: And
3 certainly we should be in contact. If there were
4 some goof-ups here, that was obviously not
5 intentional, Wayne.

6 Just before we go on I'd like to ask one
7 really dumb question, but I think we're through
8 with this topic. It's going to get reconsidered.

9 If, as Gary said, to his surprise and my
10 surprise, these filtering systems are more
11 efficient at high speed, why don't you cycle them
12 on and off, if you want less than continuous
13 operation, why don't you cycle them on and off
14 efficiently at high speed like an air conditioner
15 does, instead of seducing us into believing that
16 low speed is the right thing to do?

17 MR. MASSEY: I'll take that one while
18 you write. Sorry, you were looking at him, but
19 I'm going to answer it.

20 ASSOCIATE MEMBER ROSENFELD: I'll look
21 at you.

22 MR. MASSEY: There are always consumer
23 driven considerations. Noise is a big one. If
24 you look at some of the air cleaners out there
25 that are claiming to be silent these days, you

1 know, they are silent. They have very low
2 maintenance costs, very low energy consumption.
3 But the hard fact is they don't do anything,
4 either.

5 But people need the choice. They have
6 to make the choice. There are a lot of people
7 like this gentleman from PG&E who doesn't suffer
8 from allergies and doesn't need to run his air
9 cleaner on high, but he wants an air purifier.

10 We're in the business to provide
11 products that people want to buy. And that's what
12 we do. And if we just sold air cleaners that
13 cycled on and off on high, frankly, we wouldn't
14 sell as many. People wouldn't buy them because
15 even though they suffer, they're not willing to
16 put up with the noise associated with an air
17 cleaner 24 hours a day on high.

18 I make programmable controls in mine so
19 you can select time periods of the day to run it
20 on high, medium and low, off while you're at work.
21 This guy does the same thing in his products. So
22 we are providing those types of options to the
23 consumer, but obviously they cost more.

24 At the end of the day, 24 hours a day,
25 365 days on medium is a whole lot better than not

1 at all. So, any benefit -- I mean they are going
2 to get benefit from running them on low. But not
3 near as much as they do on the higher speeds.

4 That's --

5 MR. MORRIS: There are some other
6 considerations to this, Wayne. Particularly there
7 are some people that in small room situations
8 don't like to have the draft, if you call it that,
9 the air moving on them. And so they will opt to
10 use them at lower speeds. So it isn't always just
11 the noise; it isn't always other things.

12 There are also people that want to have,
13 you know, I guess you would call it, want to
14 have --

15 MR. MASSEY: More is better.

16 MR. MORRIS: -- it placed in different
17 rooms and that type of situation.

18 MR. MASSEY: Yeah.

19 MR. MORRIS: I know I have -- the air
20 cleaners that I have I actually have the
21 programmable type of units where when the room is
22 not occupied it runs on high and cleans the room.
23 Because my wife does suffer from rather severe
24 allergies, especially at certain times of the
25 year. And in those times of year that unit runs

1 on high all the time in our bedroom and in other
2 rooms where it can function that way. And I think
3 does very well. And then when we do occupy the
4 room it runs at a lower speed.

5 Those are the kind of functions which
6 are not assumed in the cost considerations that
7 you're looking at here. And I think that's really
8 an issue with the complexity of the marketplace
9 here.

10 Your point is a very good one about
11 making available units that cycle. Certainly
12 that's an opportunity. Some consumers don't like
13 to have them that automatically cycle. They would
14 like to be able to choose that situation. And
15 that's a function, I think, of just consumers
16 wanting the most control that they can possible
17 have.

18 ASSOCIATE MEMBER ROSENFELD: I just
19 think dummies like Gary and me should be warned
20 that if you run it at low your efficacy is down to
21 a third or whatever.

22 MR. MORRIS: Mr. Rosenfeld, all the
23 years I've known you I've never thought of you as
24 a being anything --

25 (Laughter.)

1 MR. MORRIS: -- close to being dumb. So
2 I have trouble agreeing with that assumption.

3 ASSOCIATE MEMBER ROSENFELD: So, we'll
4 leave it that Gary's a dummy.

5 (Laughter.)

6 MR. MASSEY: So thanks a lot for hearing
7 us out, we appreciate it.

8 MR. FERNSTROM: So, Michael, can I make
9 just one closing observation. Wayne opened here,
10 by noting that he thought PG&E's estimate of usage
11 was high because AHAM believes that these units
12 are, in fact, fewer in number in the marketplace
13 and used less than we suggest in the case study.

14 Then our conversation drifted to the
15 health effects and people that really need this
16 equipment in order to improve their health on
17 account of allergens and so on. And I would have
18 to assume that in those cases these things are
19 used a lot. You know, maybe even more than we
20 estimated in the case study.

21 So, I'd just like to make that
22 observation.

23 MR. MARTIN: We will certainly get
24 together, first of all to agree on a set of
25 questions to discuss. And then come up with as

1 many answers as we possibly can. And we will do
2 that very soon.

3 Could we start on number 18?

4 ASSOCIATE MEMBER ROSENFELD: With
5 pleasure.

6 MR. MARTIN: Number 18 is residential
7 air handler fans. This is one for which we have
8 written comments from GAMA, the Gas Appliance
9 Manufacturers Association.

10 Residential air handler fans are
11 provided for both central cooling and heating
12 systems. They're composed of a cabinet enclosing
13 a fan motor, blower assembly and controls.
14 There's approximately 7.4 million in service
15 throughout California. About 350,000 are sold
16 each year. The average annual per unit energy use
17 is estimated at 290 kilowatt hours.

18 The proposed efficiency requirements for
19 residential air handler fans are based on a
20 maximum fan energy ratio. The average annual per
21 unit energy savings based on the proposed standard
22 level is 160 kilowatt hours.

23 First year statewide energy savings
24 resulting from the proposed standards is 56
25 million kWh. And we show a design life of 20

1 years, and a simple payback of 7.2 years.

2 This is one that is a gray area in terms
3 of federal preemption. The requirement that we
4 have is based on the performance of fans in
5 central furnaces. Central furnaces are federally
6 regulated.

7 However, DOE legal folks consider that
8 they don't have authority over regulating the
9 electrical use. And there's a proposed wording in
10 federal legislation to clarify that they do. And
11 so just exactly where we stand is a little murky
12 at the present time.

13 But GAMA claims that we are preempted
14 from these, in which case we would have to get a
15 waiver from preemption. What we have in the
16 regulations would imply that we take that tack,
17 that we would have to get a waiver. But it's
18 anything but clear at the present time.

19 ASSOCIATE MEMBER ROSENFELD: Michael,
20 could I ask you one number before we get started.
21 I think you just said that the average use is 290
22 kilowatt hours per year. And we're going to save
23 160. That's more than 50 percent. That sort of
24 wakes me up. How do you do that?

25 MR. MARTIN: I don't know. I'll find

1 out for you.

2 ASSOCIATE MEMBER ROSENFELD: Steve's
3 about to tell us.

4 MR. NADEL: I believe the numbers in the
5 case study is that the base uses 290 for heating
6 and I think it is 205 kWh per year for cooling.
7 So the 160 is combined heating and cooling
8 savings. And you need to compare it not so much
9 to the 290 but to the 495.

10 Am I correct, Leo? Because I believe
11 you pulled those numbers together. You may want
12 to come up.

13 MR. KENDALL: This is Mark Kendall from
14 GAMA. If I remember correctly Steve is right on
15 the numbers. They assumed a 50 percent savings
16 during heating season and a 20 percent savings
17 during the cooling season. And then I didn't do
18 the math on that, but apparently the weighted --

19 ASSOCIATE MEMBER ROSENFELD: Okay,
20 that's more plausible. Thank you, folks. Leo
21 Rainer is still thumbing pages. When you get it
22 straight, Leo, let us know.

23 MR. RAINER: If I find something
24 different I'll let you know.

25 MR. KENDALL: And we would generally

1 agree on the heating side, 50 percent is a little
2 high, but the numbers we use are about 40 percent
3 savings, electrical savings during heating. But
4 it's not off enough to affect your calculated
5 payback period.

6 But if I'm free to comment now I'll go
7 ahead. And I'm not going to spend much time.
8 There's a lot of details in the technical analysis
9 that Davis Energy Group and PG&E prepared. And
10 we've submitted, I think, seven pages of pretty
11 detailed comment as best we could in such a short
12 timeframe.

13 But I know Steve Nadel said that he
14 wanted about five minutes to respond to some of
15 our written comments. And I assume that's to
16 wholeheartedly endorse them, so I want to give him
17 ample --

18 (Laughter.)

19 MR. KENDALL: -- time to do that. But,
20 just two points, three points, I guess, that I'd
21 like to make. And then I'll open myself up to
22 attack.

23 (Laughter.)

24 MR. KENDALL: On the federal preemption
25 question the regulation, as currently proposed, if

1 enacted, would ban about 90 percent of the
2 furnaces listed in our product directory from sale
3 in California.

4 The furnace is accurately represented as
5 a federally covered product, so to us there's no
6 gray area at all. As long as your enforcement of
7 the product is to ban the federally covered
8 product, unfortunately for you you don't have
9 anything you can do there.

10 It is true that the electricity
11 consumption of the furnace during heating season
12 is not subject to federal minimum regulation.
13 That's absolutely the case.

14 So, that's what I have to say on the
15 preemption issue. We believe you're absolutely
16 prevented from enacting and enforcing this
17 regulation without a waiver. So you've got it in
18 the right place.

19 ASSOCIATE MEMBER ROSENFELD: I'm not
20 arguing with you, I'm honestly confused. Are you
21 telling me that the efficiency for a heating
22 system, for central heating, doesn't take the
23 electricity use into account at all?

24 MR. KENDALL: That's correct.

25 ASSOCIATE MEMBER ROSENFELD: And yet

1 we're preempted?

2 MR. KENDALL: Yes.

3 ASSOCIATE MEMBER ROSENFELD: You're
4 saying both of those things?

5 MR. KENDALL: Absolutely.

6 ASSOCIATE MEMBER ROSENFELD: Thank you.

7 MR. KENDALL: No, the furnace is a
8 federally covered product; the furnace fan --

9 ASSOCIATE MEMBER ROSENFELD: Apparently
10 except for its fan.

11 MR. KENDALL: The product is covered by
12 federal law.

13 ASSOCIATE MEMBER ROSENFELD: Okay. I
14 think Michael Martin said it's gray, and it sounds
15 pretty gray, yeah.

16 MR. KENDALL: Yeah. Well, the fan is a
17 component of the furnace. So, if you're going to
18 propose a regulation to limit electricity
19 consumption of the furnace, the only way you could
20 do that is to prevent the sale of those furnaces
21 in the state. Well, the furnace is covered by
22 federal law. You can't prohibit the sale in
23 California based on anything to do with energy
24 consumption, including electricity consumption.

25 ASSOCIATE MEMBER ROSENFELD: I hear you,

1 I'm just not very convinced, I guess.

2 MR. KENDALL: And I'm just explaining
3 our position as clearly as I can state it. And
4 I'm the technical guy, not the lawyer guy, whom I
5 think you know very well, so --

6 (Laughter.)

7 MR. KENDALL: He'll come back in a later
8 meeting to --

9 MR. MARTIN: It's even more murky than
10 that really, in that the engineers at DOE started
11 a rulemaking about five years ago when they were
12 planning to handle these. And the rumor is that
13 the legal people tell them they shouldn't be doing
14 it. But I've never seen anything in writing from
15 DOE that takes that tack.

16 ASSOCIATE MEMBER ROSENFELD: Okay, well,
17 let's get back to the --

18 MR. KENDALL: A couple more technical
19 points. One thing that I didn't see in the
20 analysis, which I was surprised not to see, is the
21 omission of the increase in fuel consumption that
22 results from making the furnace fan motor more
23 efficient.

24 On a consumer cost standpoint they don't
25 equal out. But on a site energy use basis for

1 every kilowatt hour you save in electric heat from
2 the electric motor you use 3412 more Btus of fuel
3 to make up that heat in the home.

4 So there's a counter --

5 ASSOCIATE MEMBER ROSENFELD: During the
6 heating season.

7 MR. KENDALL: During the heating season.

8 ASSOCIATE MEMBER ROSENFELD: Of course,
9 in California our main interest is cooling season.

10 MR. KENDALL: And during the cooling
11 season that fan and the air conditioner -- that
12 fan is part of the air conditioner system. And is
13 part of the SEER rating for that system.

14 So we're just talking about -- so, from
15 a cooling season standpoint, the electricity
16 consumption is covered under federal regulation;
17 it's called SEER. In the heating season there's
18 no federal regulation. And so I'm just talking
19 about cooling.

20 MR. FERNSTROM: So, Mark, what you're
21 saying with regard to the heating season is
22 absolutely correct. However, California uses a
23 source energy basis, so for every unit of energy
24 that fan energy is reduced, and that is made up
25 for by natural gas energy, the state gains two

1 units of source energy.

2 MR. KENDALL: That may -- I don't know
3 what your energy sources are for electricity
4 generation in California during the heating
5 season. It may be natural gas. If that's the
6 case, --

7 ASSOCIATE MEMBER ROSENFELD: Marginally
8 it's natural gas.

9 MR. KENDALL: Okay, marginally during
10 the heating season?

11 ASSOCIATE MEMBER ROSENFELD: Yeah.

12 MR. KENDALL: Okay. If that's the case,
13 then you're going to be better off from a total
14 energy standpoint of burning that gas at the site
15 rather than burning at the source. I'm not going
16 to disagree with that.

17 But the numbers don't show up in the
18 calculations. And it's important to be aware,
19 using the calculations I ran you'll increase gas
20 consumption during the heating season by 25
21 million therms, which is three times the amount
22 you're proposing to save in the unit heater
23 standard.

24 MR. FERNSTROM: It's true, but if we
25 were to take that account into the calculation it

1 would work in favor of PG&E's argument. Using the
2 source energy formula or approach.

3 MR. KENDALL: Well, but when you do your
4 energy savings, your consumer cost calculation,
5 you have to add the money the consumer's going to
6 pay for the extra gas use into the calculation.
7 And, again, it's not going to --

8 ASSOCIATE MEMBER ROSENFELD: Well, Gary,
9 Mark's right. If you save a kilowatt hour of
10 electricity with a more efficient motor, you do
11 have a penalty of about a third of that much money
12 for natural gas that you have to put into the
13 system. We should do the calculations correctly.

14 MR. FERNSTROM: From a consumer cost
15 point of view, however --

16 ASSOCIATE MEMBER ROSENFELD: Yeah.

17 MR. FERNSTROM: -- that is not the
18 basis, as I understand it, of the cost
19 effectiveness of California's energy efficiency
20 rules.

21 MR. MARTIN: That's correct.

22 MR. FERNSTROM: We do not do the
23 economic calculations based upon the site consumer
24 cost. We do them based on the source societal
25 cost over time.

1 ASSOCIATE MEMBER ROSENFELD: We actually
2 do it in dollars.

3 MR. KENDALL: Do those numbers appear
4 anywhere in the record right now with those
5 calculations revealed? Because the calculations
6 that I prepared my presentation on are based on
7 consumer costs.

8 MR. MARTIN: The Warren Alquist Act
9 indicates that the standards shall not result in
10 added total cost to the consumer over the design
11 life of the appliance. So it's talking about
12 direct cost to the consumer.

13 ASSOCIATE MEMBER ROSENFELD: Including
14 his gas bill?

15 MR. KENDALL: And I think that when we
16 did the calculations, it's an objective enough
17 calculation that we're going to agree. But what
18 I'm worried about is I think it's important from a
19 policy perspective to know that the gas bill is
20 going to go up for the consumer, and the
21 electrical bill is going to go down.

22 And, you know, it will still be a net
23 benefit on an annual basis to the consumer, but
24 from a policy perspective you have to understand
25 that and include that in your calculation.

1 ASSOCIATE MEMBER ROSENFELD: Oh, Mark,
2 you're right. We accept that.

3 MR. FERNSTROM: Okay, so I totally
4 agree.

5 MR. KENDALL: All right, thank you.

6 MR. BLEES: And the current analysis in
7 the case study and in the staff report does not
8 account for increased --

9 ASSOCIATE MEMBER ROSENFELD: Gas.

10 MR. BLEES: -- gas use as a result of
11 decreased fan heat, is that correct?

12 ASSOCIATE MEMBER ROSENFELD: Yeah, --

13 MR. KENDALL: Correct.

14 ASSOCIATE MEMBER ROSENFELD: -- so we
15 should correct that.

16 MR. FERNSTROM: No, but, Mark, I've just
17 conceded that over the lifetime of the appliance
18 the cost would be lower. And if I understood
19 Michael's interpretation of the Warren Alquist Act
20 correctly, that's all that's needed.

21 ASSOCIATE MEMBER ROSENFELD: Gary, we'll
22 pass the test okay. Mark's not saying that. It's
23 just that when we do the economics and calculate
24 the payback time it's probably going to go from
25 7.2 years to 8 years or something because the

1 consumer does burn more gas. He's basically
2 substituting electric resistance heating from the
3 motor for gas.

4 MR. MARTIN: Yes, we can easily put
5 both --

6 ASSOCIATE MEMBER ROSENFELD: We can do
7 that.

8 MR. MARTIN: -- put both calculations in
9 the staff report.

10 ASSOCIATE MEMBER ROSENFELD: Yeah.

11 MR. MARTIN: And make it clear which is
12 which.

13 ASSOCIATE MEMBER ROSENFELD: Thank you,
14 sir. Go ahead.

15 MR. KENDALL: The only other technical
16 point that I wanted to mention now, though I
17 probably ought to respond to some others, is the
18 incremental cost estimate of the more efficient
19 fan motor technology.

20 In the staff report it's listed as \$133,
21 which is supposedly derived from the DOE draft
22 analysis released on this. And we found that
23 shockingly low. And I think current retail data,
24 which, you know, I tried to gather in the matter
25 of days that we had, would bear out that \$133 is

1 impossibly low at this point.

2 The DOE numbers, themselves, I believe, a
3 nd maybe if I'm wrong somebody can correct me, are
4 a projection of what incremental costs would be
5 using new technology that would be developed in
6 the case where national standards on these
7 products were imposed. And you were selling 3.5
8 million furnaces with this technology in it in
9 2014 or whatever.

10 So, if you're talking about standards
11 for California today or 2006 or 2007, we would
12 just ask that you would try to do something from
13 the current market to see if you can even prove to
14 yourselves that \$133 is reasonable.

15 Just the few pieces of data that I was
16 able to capture off the internet, which are
17 wholesale prices from -- turned out all to be from
18 one manufacturer's product -- even though it was
19 hard to compare because it wasn't just a motor
20 replacement, but even those average out to be a
21 \$300 difference at wholesale cost.

22 And I would expect that at the retail,
23 the typical consumer today, if buying products
24 that had just an ECM motor, this brushless dc
25 motor that we're talking about, probably you're

1 talking about \$500 incremental cost.

2 And you can plug those numbers in and
3 see what happens to your payback then. But rather
4 than going from 7.4 to 8, it's more like 7.4 to 25
5 or 30. I mean this product isn't sold today on
6 the basis of energy savings; it's sold today on
7 the basis of comfort, better dehumidification in
8 the cooling season, quieter operation in the
9 heating season, more consistent temperature
10 control in the home. And consumers that have that
11 money to spend and prefer to spend it on items of
12 comfort, spend it on this product.

13 It's very difficult to justify selling
14 this product or imposing the sale of this product
15 on people based on energy savings alone. So,
16 we're just asking the Commission to try to gather
17 a little bit more evidence on the retail price, in
18 incremental price difference for these.

19 That concludes the comments I was
20 prepared to make.

21 MR. NADEL: I guess my appointed task is
22 to agree to Mark, at least on some aspects. First
23 I wanted to -- I appreciate getting the comments
24 in advance. I was able to review them on the
25 plane, and be able to think about how to respond.

1 First I want to agree with Mark; he
2 caught an algebraic mistake that was made. We did
3 a simple ratio and we needed to use our algebra.
4 The correct threshold that we were suggesting is
5 5.82 percent for the medium size equipment, if you
6 will. He is correct on that.

7 He's also correct, I believe, per the
8 previous conversation on how gas should be
9 included. I know when we've done the calculations
10 we generally have included the price of gas. This
11 dialogue's been going on, I'd say, for at least a
12 year. You know, Mark, Harvey, Sax from our office
13 and I have had various meetings at GAMA, varied at
14 ASHRAE, et cetera. So there is definitely part of
15 an ongoing dialogue, shall we say.

16 Preemption, I think, has been pretty
17 well covered. The basic point I'd make, which is
18 to pick up on what Art said, is we have a major
19 opportunity for energy savings and someone needs
20 to be going after it. If DOE says they can't do
21 it, then someone else needs to. Or it's falling
22 between the cracks now.

23 GAMA's next comment is that the energy
24 ratio should be based on site energy used, not
25 source. To some extent you could go either way,

1 you know, it's a metric. And as long as the
2 products meet the metric I would agree that site
3 is more precise. Because we know from physics
4 that the 3412 Btus per kilowatt hour source is
5 less precise. It varies.

6 The reason, in addition to all the
7 references that Gary is talking about to source
8 energy use here in California, when this metric
9 was first introduced some manufacturers were
10 saying, oh, don't bother regulating, it's only 2,
11 3 percent of energy use. It's not 2, 3 percent of
12 total energy use; it's, you know, 6, 10, 12
13 percent of total energy use. And we felt there
14 was some disinformation being circulated around
15 the use of the term site.

16 So we could go either way provided
17 there's not disinformation. But if it's going to
18 be used as an argument, oh, this is unimportant,
19 then I think it's important to use source.

20 ASSOCIATE MEMBER ROSENFELD: Steve,
21 actually I think this is a settled issue in
22 California because we have gone entirely to price
23 simply because electricity value is a function of
24 time of day. And so we've adopted so-called time
25 dependent valuation for electricity.

1 And once we'd done that we're, you know,
2 committed to just being dollars. So, for good or
3 evil, that's the way it's gone.

4 MR. BLEES: Maybe I should follow up on
5 what Mr. Martin says. First, let me congratulate
6 Mr. Martin, and I'm sorry, I've forgotten your
7 name, sir.

8 MR. KENDALL: Mark Kendall.

9 MR. BLEES: Thank you, -- Mr. Kendall,
10 who are doing, both doing an excellent job as
11 lawyers. You can tell Joe that he'd better watch
12 out.

13 (Laughter.)

14 MR. BLEES: Mr. Martin is correct. The
15 statute does require us to use cost effectiveness
16 to the consumer when setting the appliance
17 standards.

18 There are certainly very good arguments
19 that -- policy arguments that can be made that
20 cost effectiveness should be based on a source or
21 more broadly societal basis, but we do not have
22 that choice.

23 And I also just wanted to follow up on
24 the preemption comment. That is essentially
25 irrelevant as to whether or not the Energy

1 Commission should adopt a standard. Preemption is
2 relevant only in that if, in fact, the states are
3 preempted from setting a standard for air handler
4 fans, any state that does set a standard has to
5 get a waiver from DOE before the standard can go
6 into effect.

7 But preemption doesn't say we cannot set
8 a standard. It says we can't enforce it until we
9 get a waiver.

10 ASSOCIATE MEMBER ROSENFELD: Back to
11 Steve.

12 MR. NADEL: Okay. Continuing along with
13 some of the comments in GAMA's written comments,
14 they ask for clarification about what happens to a
15 furnace that is exactly 60,000 Btus per hour, or
16 exactly 150. The intent here is that those
17 particular values get included with the very
18 smallest or very largest units. So the category
19 should be 60,000 or less; and the category should
20 be 150,000 or more. We're not trying to suggest
21 that you do it exactly this value or there's no
22 coverage. So, thanks for picking up on that.

23 Overall we find that about 10 percent of
24 the products meet this level in the middle
25 category. And typically more like 20 percent or

1 more in the outer categories. We loosened up on
2 the outer categories because there's a lot less
3 product sold, and we wanted to make sure that
4 there was adequate product coverage.

5 I think Mark has slightly different
6 numbers. He may be using a slightly different
7 director. The other thing we did that may have
8 affected it is we eliminated all the duplicates
9 where a manufacturer may have five, 10, 20 models
10 with exactly the same performance. So we
11 eliminated those. I don't believe you did.

12 MR. KENDALL: No, and we agree that
13 that's the way it should be done most of the time.
14 I just didn't have time to do that for this
15 meeting.

16 MR. NADEL: Right. Leo came up with a
17 nifty way to help catch the duplicates with only
18 half a day's worth of work as opposed to the days
19 and days. He can tell you about it offline.

20 Mark, in his comments, asked will the
21 pruning that we did affect the variation between
22 upflow, downflow, horizontal furnaces. In the
23 last couple of days, the few days that we've had,
24 we've only had a chance to look at the lower
25 category. CEC Staff suggested we concentrate on

1 the less than 60,000, because in this mild climate
2 they're the most common.

3 Of those there's -- most of the units
4 that passed our suggested standard will work in
5 both an upflow and horizontal position. There are
6 much less units that would work in a downflow.
7 But my understanding is there's relatively few
8 downflows used in California. So the fact that
9 there are few is more representative of the fact
10 that they're no a very common product to begin
11 with.

12 He asked also will some products in a
13 manufacturer's family remain, some not. Yes,
14 depending on how they engineer each of their
15 products. Some products may pass; some may not.
16 It doesn't capture, quote, "whole families", if
17 you will.

18 Will single stage furnaces still be
19 available? Yes. Of the products less than 60,000
20 that passed the proposed standard, half are single
21 stage and half are two-stage. So it doesn't in
22 any way require a two-stage operation.

23 I think a lot of manufacturers have
24 combined the better fans with two-stage operation
25 in premium priced products. But they can do one

1 or the other; the two are not always linked.

2 I guess typically if you have a two-
3 stage burner you'll usually have a two-stage fan.
4 But the reverse doesn't have to be true.

5 Are an adequate number of manufacturers
6 preserved? If we looked at the smaller subclass I
7 believe there are eight different manufacturers.
8 I may be off by one because I get mixed up, you
9 know, gee, who owns Armstrong, who owns Luxaire,
10 those types of things. But it's a lot of
11 manufacturers.

12 The other thing I'd point out is all of
13 this discussion is based on current products. But
14 the whole -- a large intent here is that the
15 standards should be set with enough time for
16 manufacturers to be able to bring new products on
17 the market typically by taking some of their
18 existing products and putting a more efficient fan
19 in them.

20 So unlike many of the standards where
21 the recommendation was for a 2006 effective date,
22 the recommendation for this one is 2007. And if
23 industry says, oh, it would be really really
24 helpful to have another year, I, for one, would be
25 willing to entertain it. Obviously many people

1 would have to be involved in that decision.

2 Mark talks about annual savings
3 estimates are incorrect. I think he clarified
4 that we're pretty much in the same ballpark in
5 terms of heating energy savings. Yes, there's
6 some slight differences given, you know, exactly
7 what data sets each person analyzed. But we're
8 basically in agreement.

9 I think the bigger issue in terms of
10 savings is whether there are any cooling savings.
11 I believe Mark takes the argument that there will
12 be no cooling savings because all of that will be
13 reflected in the SEER test.

14 We would disagree. I think Mark does
15 note that in half the cases you probably have a
16 new outdoor unit -- a new air conditioner going in
17 and you're not affecting the blower. And
18 therefore, in that half of the case, a more
19 efficient fan wouldn't affect the SEER. And so
20 there should be cooling savings.

21 In addition, the SEER procedure
22 dramatically underestimates the fan energy use.
23 It doesn't give full credit to fan energy use, and
24 hence fan energy savings, because it assumes very
25 low static pressures. Yes, there are a few

1 systems that are ideally designed that may do it.
2 But the vast majority have much higher static
3 pressures, as the CEC has recognized in its title
4 24, where it assumes significantly higher static
5 pressures in terms of tradeoffs than is used for
6 testing this equipment.

7 Also I would agree that if you have a
8 unit that's SEER 10, that just squeaks by the
9 standard, yes, the furnace fan is included. You
10 put a better furnace fan on, it may make it a
11 10.5, may make it higher. It's not like people
12 buy a particular SEER level and say this is what I
13 want, and if I get the better fan I'm going to
14 take something else out. When you're dealing
15 above the minimum you can get higher SEER
16 sometimes, not always, as a result.

17 So I would submit that in most of the
18 cases, although not every case, there will be
19 cooling savings that should be included in the
20 calculations. Obviously in California the cooling
21 is important, both for the kWh saved, but also for
22 the fact that some of this is onpeak. Because
23 these fans tend to operate at high operating hours
24 on those days where it hits 95 or 100 here in
25 Sacramento.

1 ASSOCIATE MEMBER ROSENFELD: Well,
2 again, I made the point that if you use our modern
3 time dependent valuation for electricity that
4 happens automatically.

5 MR. NADEL: Correct. And a lot of these
6 cooling hours are going to be those hours where
7 you are talking 15, 20, 25 cents per kWh on a time
8 differentiated value. So even if the kWh are
9 less, they are very high value kWh.

10 Then Mark talked about the incremental
11 cost of improvement is unrealistically low. I
12 agree with Mark that you can buy units on the
13 market today that cost \$500 more with a better
14 fan. They often include the two-stage burner,
15 which we're certainly not in any way requiring it,
16 as it's an extra added amenity.

17 These products seem to be niche
18 products; they're highly profitable for the
19 manufacturers. I suspect they're even better than
20 the air handler manufacturers with the three-times
21 markup. These incremental costs, it's very high
22 profit. But if you start mandating it, yes, they
23 can make some profits on it, but not profits quite
24 that high. I think when it's mandated the cost
25 will come down quite a bit.

1 Our understanding is the cost to the
2 manufacturer of these better fans is currently
3 \$75, \$80, something like that. So even when you
4 add the markups you're not that far beyond the, I
5 think it was \$133, which we did get from DOE.

6 That DOE cost, I believe, is for current
7 technology, it's not new technology. It is DOE's
8 estimate of what the cost would be if these are in
9 very widespread production. On the other hand,
10 DOE has a long history of dramatically over-
11 estimating costs. And I did bring one graph, if
12 we could turn that on now.

13 We're got furnaces, refrigerators and
14 air conditioners.

15 (Pause.)

16 MR. NADEL: I can stand up and you can
17 hear me? No.

18 (Pause.)

19 MR. KENDALL: I can say I've learned two
20 things. One, if you're going to submit comments
21 in advance be here to defend them, versus NEMA's
22 experience.

23 And the second, if you're going to
24 submit them in advance, submit them the day before
25 rather than a week before.

1 (Laughter.)

2 MR. NADEL: Okay. I will walk you
3 through it; I will submit a hard copy for the
4 record. You can see the bars, you will not be
5 able to read the exact numbers.

6 This graph compares various cost
7 estimates that were made for different standards,
8 for the 1992 furnace standard, for the 1992/1993
9 air conditioner heat pump standard; for the 2001
10 refrigerator standard. All of these are basically
11 manufacturer costs, not retail costs, but
12 manufacturer costs.

13 In the case of furnaces, that means that
14 DOE -- I can't read the exact figure here, I think
15 they estimated around \$70 extra cost to meet the
16 current furnace standard. This is Census Bureau
17 data looking at the actual cost per unit it wound
18 up being about half that.

19 UNIDENTIFIED SPEAKER: That was some
20 years later.

21 MR. NADEL: Yeah, the original estimates
22 were made in the '80s; these were estimates based
23 on actual costs in 1992, 1993 when the standards
24 took effect. They were all trying to estimate
25 what those costs would be. They included learning

1 curves, they included, you know, inflation, et
2 cetera.

3 But it proved to be in that case like
4 half of what was expected.

5 MR. BLEES: So, Steve, in each of the
6 three --

7 MR. NADEL: Bear with me, it is so
8 blurred -- the one -- oh, I'm sorry, my mistake.
9 This one, 220, is the DOE estimate. My mistake.
10 220 was the DOE estimate, 38 was the actual. The
11 78 was the ACEEEE estimate. We were off by a
12 factor of 2, unlike DOE, which was off by about a
13 factor of 8.

14 The air conditioner, this was an ARI
15 estimate at 381. DOE was down at 174. If you
16 look at the census data it was 18. So they were
17 off by a factor of 10 there.

18 Refrigerators, we're doing a maybe a
19 little better. DOE estimated 50. If you look at
20 the census data it was \$3. So, point here,
21 without getting into, gee, is this exact number
22 right, DOE has a long history of dramatically
23 over-estimating the costs.

24 So the DOE 133 I think is going to be
25 very much an over-estimate, and this becomes a

1 national standard. But it's probably a reasonable
2 value for California to use. I agree with Mark
3 that if California does it, the impacts on prices
4 will not be quite as dramatic as if you make a
5 national standard as illustrated by that data.

6 And I will submit a hard copy for the
7 record.

8 Just to wrap up, Mark makes a comment
9 about payback. That's basically all a function of
10 these other things. We agree on how you calculate
11 payback. It has to do with what is the price, and
12 do you include cooling savings, is probably the
13 two big differences on payback.

14 And with that, I will wrap up. I don't
15 know whether Mark wants to respond or Leo wants to
16 add something.

17 MR. KENDALL: I'm probably going to want
18 to respond to something before Wayne, although I'm
19 sure Wayne will be happy to chip in.

20 (Laughter.)

21 MR. MORRIS: Well, I guess,
22 unfortunately, I wasn't going to comment on air
23 handling equipment until our industry was
24 disparaged by Mr. Nadel's graph, which we can't
25 read, but --

1 (Laughter.)

2 MR. MORRIS: Maybe that's another thing
3 that we ought to do when we submit comments, Mark.

4 Unfortunately I don't think that that
5 information on the payback analysis and the dollar
6 figure on refrigerators is accurate. And I would
7 beg for the record that that not be included as a
8 submittal without some serious fact checking.

9 Thank you.

10 MR. KENDALL: Well, I would say that the
11 census data is not manufactured cost data. The
12 census data is manufactured price data, which it's
13 not even broken out between quantity and unit
14 price. It's the industry value; there's quantity,
15 and then you divide the two and you calculate what
16 you can inadvertently consider to be manufacture
17 cost changes.

18 You know, everybody understands the
19 difference between price and cost. And there are
20 pressures in the marketplace that bear on price.
21 And there are pressures in the marketplace that
22 bear on cost. And the graph has, I think,
23 little -- census data has little significant
24 statistical -- you can't use it for a statistical
25 analysis at all. You can look at it for trends,

1 maybe, over time. But you have to understand
2 what's going on in the areas of price and
3 materials cost, and if you want to back out just
4 what the effects were related to the standard.

5 Regarding past DOE estimates, if these
6 were done for furnaces say in 1990, late 1980s,
7 there weren't even condensing -- I mean there may
8 have been condensing furnaces on the market at the
9 time, but I don't know what sort of sales volume
10 they had. I don't know what the technology was,
11 you know. I'm not prepared to address that.

12 But to try to use a graph like this to
13 imply that therefore every estimate that DOE has
14 done or will ever do in the future needs to be cut
15 by, you know, 80 percent, I just think that
16 that's, to use your phrase, a bit of a stretch.

17 And it would be helpful to understand
18 what they did wrong, not only that they did
19 something wrong, but what did they do in their
20 calculations, in their projections. You know,
21 where were they wrong. How can that be corrected
22 for the future so that when they post an analysis,
23 and it's looked on to be very credible by the U.S.
24 community, you know, have people looked at it to
25 make sure they didn't make the same mistakes

1 again.

2 ASSOCIATE MEMBER ROSENFELD: Well, I
3 will make one comment, though, Mark. I'm sure
4 there are differences between price and cost. On
5 the other hand, there's a famous thought, you've
6 probably seen it floating around, by Dave
7 Goldstein about refrigerators for the last 30
8 years.

9 During that time the energy use has
10 dropped to a quarter. And you would think that
11 the retail price would have gone up. But it has
12 dropped to one-third. And that's average over the
13 whole industry, you know, 10 million refrigerators
14 a year for 30 years.

15 And it's pretty hard to get around the
16 fact that these costs never seem to go up.

17 MR. KENDALL: Right. Well, in the
18 question -- my point is the question should be
19 what would they have been cut by one-half had the
20 standards not been in place.

21 ASSOCIATE MEMBER ROSENFELD: Sure.

22 MR. KENDALL: So, comparing what would
23 have happened to the case where there were an only
24 effect on standards.

25 ASSOCIATE MEMBER ROSENFELD: Steve.

1 MR. NADEL: Since we're talking about
2 these estimates, I want to respond on a couple of
3 things. First, these are not consumer prices by
4 any respect, stretch of the imagination. So they
5 don't include markups at the wholesaler, the store
6 where things can be much more variable. These are
7 effectively as it leaves the manufacturer.

8 So, if anything, they may be
9 conservative because it does include manufacturer
10 markups, manufacturer profit in the census data
11 that was not included in the DOE data.

12 There are other things going on, I will
13 grant Mark that. I am not arguing that therefore
14 you always have to take just 10 percent of the DOE
15 estimates. I'm just saying DOE has a long history
16 of mis-estimating. There's another paper I know
17 that was presented at the ACEEE summer study in
18 2002 that looked at five or six different
19 products, also included that DOE has a long
20 history of over-estimating.

21 So, when you look at the DOE estimates
22 you have to recognize that there's an excellent,
23 not a guaranteed chance, but an excellent chance
24 that they may be high, because they still are
25 using the same techniques. I would hope that they

1 would improve their techniques.

2 I would also point out the way we
3 develop these, we compared the cost just before
4 and just after the standards took effect. To the
5 extent there are long-term trends like costs have
6 come down since an estimate in the early '80s,
7 until they took effect that was not included.
8 Because we were just looking at a relatively
9 narrow period right around when the standards took
10 effect. There may be some second order effects,
11 but the long-term trends were already allowed out.
12 And I think they do show that DOE does have a poor
13 record, shall we say, of getting these costs
14 right.

15 MR. MULLEN: Jim Mullen from Lennox. I
16 would like to make a comment on the costs with
17 time graph up there. Something that's not seen in
18 that, that is underlying, is that the basic cost
19 of materials from the late '80s through probably
20 the fall of last year had declined substantially,
21 copper, steel and iron.

22 And probably since last fall if you
23 looked at commodity prices for steel, they're up
24 50 percent. And if you look at copper and
25 aluminum, they're up almost 100 percent.

1 So I don't know that I would necessarily
2 extrapolate from here on out that prices will go
3 down. Matter of fact, I think if you read the Air
4 Conditioning News you'll probably see that most
5 major manufacturers have all raised prices within
6 the last few months, up to 6 or 8 percent.

7 MR. KENDALL: Steve made a couple other
8 points that I need to respond to. On the number
9 of manufacturers whose products would still be
10 eligible under this regulation, it's important to
11 note who makes what brands. Because there's only
12 seven major manufacturers of furnaces right now.
13 If you're counting eight, then clearly there's
14 people that -- you know, there's multiple brands
15 being sold by the same company. And we can help
16 sort that out.

17 They change and fairly frequently, but
18 we keep a good grasp since we have the industry
19 directory.

20 About static pressure, or about the SEER
21 test procedure under-estimating electricity
22 consumption because static pressures in the field
23 are higher than they are in the test procedure,
24 that's, from the data I've seen, I'm not an AIR
25 guy, but, you know, that certainly seems to be a

1 good argument. There's data to back that up.

2 But the -- well, there's two points
3 here. The test procedure is intended to be, you
4 know, a certain standard test point, so that
5 everybody measures their values at the same point.

6 If you raised that static pressure
7 requirement to match whatever you think that it is
8 in the field, you would have certainly different
9 electricity consumption in the test procedure.
10 You would have to then, you know, a 10 SEER may
11 only be equivalent -- the same unit may only
12 measure 9.5 SEER, I don't know what it would be.

13 The question is what would that do to
14 the design of the equipment. Would you design the
15 equipment differently because you're now operating
16 it under a higher static pressure than what occurs
17 in the test procedure. And you may, but one
18 important thing to note about the current
19 technology that this regulation would impose is
20 that at higher static pressures the electricity
21 consumption increases. Where the technology that
22 wouldn't be allowed by this regulation, the
23 electricity consumption of the motor would
24 decrease.

25 And it's still an open question about

1 whether it makes sense in high static pressure
2 situations to require a brushless dc motor with a
3 control scheme that's currently being applied.

4 So, that's -- although that argument may
5 lead somewhere some day, I think it's too early
6 really right now to use that to imply that cooling
7 season energy savings are under-estimated from a
8 change to a brushless dc motor.

9 And I'm sorry for the rest of you who
10 have no idea what we're talking about now
11 because --

12 (Laughter.)

13 MR. KENDALL: -- as Steve said, we've
14 been having these discussions now for over a year,
15 and you are hearing it for the first time.

16 MR. MULLEN: Jim Mullen from Lennox.
17 Let me back up for a second. I'd like to ask Mr.
18 Nadel or Mr. Kendall how many package units were
19 included in their analysis of how many furnaces
20 survived.

21 California was, at one time, the largest
22 market for single-phase gas/electric package units
23 mounted on residences. To my knowledge very few,
24 if any, of those have ECM motors in them.

25 So I guess I'm wondering how the screen

1 could be at 90 percent.

2 MR. KENDALL: The quick survey I did, I
3 didn't differentiate between indoor and outdoor.
4 But that's fairly easy to do with our database.

5 MR. MULLEN: I think it would be good to
6 check because I think you may well find that very
7 few, if any, package units pass the screen, which
8 means there would be no units available for that
9 market unless somebody developed them specifically
10 for it.

11 MR. RAINER: I believe the database that
12 both I and Harvey had looked at, we looked at
13 strictly --

14 ASSOCIATE MEMBER ROSENFELD: Is your
15 mike on?

16 MR. RAINER: I think it's on, I'm just
17 not close enough. Leo Rainer, Davis Energy Group.
18 The screen that we took with the GAMA data I
19 believe we exempted weatherized units and exterior
20 and looked at just interior, nonweatherized. So
21 they're not even in the analysis there.

22 MR. MULLEN: They're not considered
23 space heaters?

24 MR. RAINER: No, they were not
25 considered in the analysis of the fraction of

1 units available.

2 MR. KENDALL: So they're not in the data
3 set, but they are covered by the proposed
4 regulation?

5 MR. NADEL: Actually, are you talking
6 about units that are both air conditioners and
7 have a gas furnace to them?

8 MR. RAINER: Yes.

9 MR. NADEL: If they are I believe those
10 are covered by the DOE air conditioner standards.
11 And because the energy use of the fan is
12 imperfectly, but it is included in the test
13 procedure, we didn't include them either way
14 because we thought that the preemption case was
15 stronger in that case than it was in the furnace
16 only case, where the air handler is clearly not
17 part of the DOE standard.

18 MR. MULLEN: As I would understand your
19 proposed regulation, a gas/electric package unit
20 would be covered by it. It would have to meet the
21 fan efficiency ratio.

22 MR. NADEL: We can check into that.

23 MR. RAINER: Yeah, I think we'd have to
24 look at the definition and make sure the
25 definition covers what everybody agrees to.

1 MR. MULLEN: A second point I'd like to
2 take up is the discussion about two-stage units
3 and all the units are too expensive or more
4 expensive because they're two stage. And if that
5 could be taken out to reduce the cost.

6 Certainly that's true, but you can't
7 have your cake and eat it, too. The low energy
8 consumption ratings on the blower are partially
9 due to the two-stage operation. The furnace,
10 under the DOE calculation procedure, is assumed to
11 operate on low speed most of the heating season.

12 So if you're going to make it a single
13 speed unit, you need to recalculate the wattage
14 for high speed operation, which I'll guarantee
15 will be higher.

16 MR. RAINER: I would say that the data,
17 the units that easily meet the standard there, a
18 lot of those are two-stage. But the savings that
19 we calculated were based purely on fan energy
20 savings, not on the average fan energy ratio of
21 any of the units that met this.

22 MR. MULLEN: But the measure that you
23 try to accept or reject units by is based on EAE,
24 which is based on low speed fan operation.

25 MR. KENDALL: The basic situation is you

1 get some energy savings if you put an ECM motor on
2 a single stage furnace. Then you get more if you
3 put it on a two-stage furnace, much more.

4 And the question is the level that
5 you're proposing, did that consider the scatter
6 plots differentiate between single-stage and two-
7 stage. Steve mentioned that somehow half of the
8 units are two-stage, half are single-stage, which
9 may be the case.

10 But we want to clarify that because
11 whichever incremental cost, you know, that affects
12 what you -- for incremental cost, product
13 availability and energy savings, as well.

14 MR. RAINER: I would have to look at the
15 data but I believe all of the two-stage units
16 would meet this, and they meet that both because
17 they're two-stage and have ECM. But two-stage all
18 have ECM.

19 But I don't think you would find any
20 non-ECM fans that don't meet this. So if you're
21 just adding an ECM fan you will meet this. I
22 don't think you would see from going to two-stage
23 the savings without having an ECM fan. You
24 wouldn't.

25 You're not going to see sufficient

1 savings just going to two stages. You're not
2 going to meet the standard with just using a two-
3 stage fan and getting the lower speed operation.
4 You would still have to use an ECM fan.

5 But I'd have to look at the data to see
6 if there are any that are just two-stage without
7 ECM.

8 MR. NADEL: There are actually some
9 units that do not have ECM fans that would meet
10 the proposed standard that they have effectively,
11 I assume they have low static or some other design
12 that allows them to get the air flow with a lower
13 wattage fan.

14 MR. MULLEN: I had a third point I'd
15 like to make if we're clear on the two-stage
16 differentiation and its effect on operation.

17 The third is a point that Mark was
18 making on high static. I think if you put an ECM
19 system on a high static duct system you may well
20 end up with poorer cooling efficiency and more
21 watts in heating. Because of the way they
22 operate.

23 MR. RAINER: I think your cooling
24 efficiency should be better because you'll
25 maintain air flow. You will have higher fan

1 energy use because the ECM will maintain air flow
2 while a PSC, air flow would drop off on the fan
3 curve.

4 But your air conditioner efficiency
5 would actually improve, because it would maintain
6 air flow.

7 MR. MULLEN: The total efficiency of the
8 air conditioning system may not improve with ECM
9 if you put a lot of fan watts in. While you have
10 the capacity, you lose the capacity due to the
11 extra wattage that you've drawn. Whereas if on
12 the PSC motor, when the capacity drops off the
13 watts drop off and you're net efficiency may be
14 higher.

15 So it's not a given that just dropping
16 an ECM in a system will give you lower power
17 consumption or better efficiency.

18 MR. RAINER: I would suggest that in a
19 high static that you may find that you have lower
20 fan energy use, but then you would not be
21 producing the required air flow for that unit.

22 And --

23 MR. MULLEN: That's true, and the
24 capacity would -- but the net efficiency change.

25 MR. RAINER: One criticism of the

1 standard has been whether we would be pushing
2 manufacturers to provide lower air flows. And we
3 want to try to maintain air flow. And the use of
4 ECMs pretty much guarantees that you have that air
5 flow. So it's a benefit of another -- a nonenergy
6 benefit of the ECM that the air flow is
7 maintained. And that your efficiency of the air
8 conditioner is maintained.

9 But you're right that the fan energy
10 savings from such a system would not be as much in
11 a lower static.

12 MR. MULLEN: I agree that it will try
13 and maintain the air flows up to its capacity of
14 the motor, but the wattage will increase
15 proportionately to the static.

16 MR. KENDALL: This is, you know, we're
17 speculating about this, but there's going to be a
18 13 SEER air conditioner standard coming into
19 effect in 2006.

20 If manufacturers could meet that 13 SEER
21 most cost effectively by putting in a fan equipped
22 with an ECM motor, then that will be the way that
23 will come about.

24 SEER is your tool to promote savings in
25 the cooling season. And if you're going to try to

1 force prescriptive requirements such as an ECM
2 motor, certain type of compressor, certain volume
3 of heat exchanger, that's really what this
4 standard is intended to do. Is, okay, we want you
5 to do 13 SEER but we want you to do it with an ECM
6 fan motor.

7 That's just not the way the regulation
8 SEER test was designed to work. And if you want
9 more savings in the cooling season, you're going
10 to get them in 2006 with the 13 SEER rule.

11 The heating season, you know,
12 absolutely. If you want electricity savings in
13 the heating season this is one place you have to
14 look. But in the cooling season the only case
15 that I can identify where it is valid that you'll
16 save is if you take the furnace with an ECM motor
17 and put it on an existing air conditioning unit in
18 the situation of low static pressure where you
19 know the ECM is going to draw less watts than the
20 PSC in that air conditioning system.

21 And you would keep offering, you know,
22 let's say that happens half the time. But we
23 don't have any data for that. You can estimate it
24 various ways and try to get that sort of number.
25 But, you know, initially ACEEE was claiming that

1 in all cases and we were claiming it in no cases.
2 And we're trying to --

3 (Laughter.)

4 MR. KENDALL: -- and we're trying to be
5 somewhere in the middle.

6 MR. NADEL: We're coming together. Let
7 me add a couple of things on that. The primary
8 energy savings from this proposed standard is in
9 the heating season, because the air flow is
10 generally lower in the heating season in terms of
11 cfm. There's more opportunity to save with a fan
12 that operates better at lower speeds.

13 So, roughly speaking, I think you said
14 something like 130 kWh, 120, 130 kWh per year are
15 saved in the heating season. We're saying in
16 addition to that you add another 40 or so kWh in
17 the cooling season.

18 So we're having a debate about whether
19 it's 40, or is it 30, or the 50. But I think we
20 agree that the majority of savings are in the
21 heating season. And I think we agree that there
22 are some cooling savings; you will argue that they
23 are significantly less than we would say. But I'm
24 just trying to put this in perspective. Because
25 it's the same fan it will affect heating and

1 cooling.

2 I agree it would be great to improve the
3 SEER test procedure. I know we've talked to the
4 industry and the DOE about initiating some
5 discussions there. And, you know, maybe by 2010
6 or something we'll have something new. But it's
7 going to be a long-term process. We should do it,
8 but it's not going to happen overnight.

9 It's a complicated procedure, and trying
10 to come up with something that is simpler, but
11 that actually works, is going to take some
12 creative doing; and, you know, having to work
13 through all the issues about different
14 manufacturer products and certain ones get the
15 advantage or disadvantage based on certain ways
16 you do things.

17 But we should do it, and I know the CEC
18 has been very supportive. PG&E has been very
19 supportive of saying it's time to take a fresh
20 look at this test procedure.

21 One other thing I wanted to mention is
22 before Wayne was saying we were maligning AHAM;
23 no, we were not maligning AHAM. We're
24 congratulating AHAM for finding such a great way
25 to improve efficiency at such a low cost. We were

1 maligning DOE. But we would like to congratulate
2 AHAM.

3 MR. MULLEN: I would make one more
4 comment, just a thought that occurred to me. That
5 with duct leakage if you put --

6 ASSOCIATE MEMBER ROSENFELD: Didn't hear
7 you. With?

8 MR. MULLEN: I'm sorry, with duct
9 leakage.

10 ASSOCIATE MEMBER ROSENFELD: Yes.

11 MR. MULLEN: If you put an ECM motor in
12 and it operates at higher static than the PSC
13 would have operated, you've increased your duct
14 leakage.

15 ASSOCIATE MEMBER ROSENFELD: Of course,
16 in California we now require external third-party
17 evaluation of duct leakage, and it's got to be
18 less than 6 percent in new homes.

19 MR. MULLEN: I understand that. The 6
20 percent, however, is at a fixed static pressure.
21 If you don't hold the static pressure in the duct
22 system, which you may well do with the ECM motor,
23 the leakage becomes more than 6 percent.

24 ASSOCIATE MEMBER ROSENFELD: You're
25 right.

1 MR. KENDALL: My final comment would
2 just be similar to the one Wayne Morris closed
3 with, which was we've spent probably an hour
4 talking about a lot of good issues. And I really
5 appreciate the conversation. We really could have
6 done this two months ago on a conference call or
7 in a meeting somewhere and saved a little time for
8 the Commission and, you know, the poor folks in
9 the audience that had to sit through this.

10 And, you know, we try to be, just like
11 AHAM mentioned, very open; that's what our members
12 pay us for is to answer questions. They teach us
13 and then we try to teach the people who call us
14 and ask us questions. What does your data mean?
15 You know, I have this report that an AHAM
16 consultant did; I don't have the assumptions; I
17 don't know, you know, why I didn't call to ask you
18 what the assumptions were.

19 So, we're available; we're here to help.
20 You know, we'll try to give you as much
21 information as we can possibly give you. And we
22 just, you know, want people -- California is a
23 big, important market, you know. Ten percent of
24 all furnaces sold, probably, come into the State
25 of California. It's an important state for our

1 members. It's important for our members that the
2 analysis that you do, preemption or not, is done,
3 you know, with very sound objective science behind
4 it.

5 And, you know, give us a call anytime.

6 ASSOCIATE MEMBER ROSENFELD: Michael, I
7 have a question for you. You're the boss of the
8 agenda. We've been going since 1:15. We could
9 take a five-minute coffee-and-soft-drink break
10 while Rendezvous is still open, or we can churn
11 ahead.

12 MR. MARTIN: I abstain from that because
13 I just took mine.

14 (Laughter.)

15 ASSOCIATE MEMBER ROSENFELD: How's it
16 looking? What time are you aiming to --

17 MR. MARTIN: Well, we have left unit
18 heaters and duct furnaces, which I don't think is
19 going to take very long.

20 And then a series of refrigeration
21 items. And I would be very pleased if we could
22 get it all done today. But I haven't much of a
23 feeling for how much the discussion is going to be
24 on the refrigeration stuff.

25 But I think we've got a chance.

1 (Parties speaking simultaneously.)

2 UNIDENTIFIED SPEAKER: I would guess
3 looking more like the air conditioning discussion.

4 MR. MARTIN: Good. I think you all
5 deserve a break.

6 ASSOCIATE MEMBER ROSENFELD: The place
7 to get soft drinks and stuff is only up one set of
8 stairs and down. So let's make it a seven-minute
9 break, okay, not 15 minutes.

10 MR. MARTIN: Okay.

11 (Brief recess.)

12 MR. MARTIN: We're on section number 19,
13 unit heaters and duct furnaces. As I said before,
14 I think we can get this and the refrigeration
15 stuff taken care of today if we keep moving.

16 ASSOCIATE MEMBER ROSENFELD: Michael, I
17 don't think your microphone's on full blast.

18 MR. MARTIN: It is, but I'll talk into
19 it instead. So, it's not the microphone's fault,
20 it's mine.

21 Unit heaters and duct furnaces are both
22 nonducted space heaters, but duct furnaces do not
23 have an integral fan or blower as unit heaters
24 typically do.

25 There's approximately 840,000 unit

1 heaters and duct furnaces in California. About
2 42,000 are sold in the state each year. Average
3 annual energy use is 1056 therms per unit per
4 year.

5 The proposed standard for unit heaters
6 and duct furnaces is a design standard to include
7 either a power vent or automatic flue damper.
8 Approximately 190 therms per unit per year will be
9 saved through the proposed design standard.

10 First year statewide energy savings
11 resulting from the proposed standard is
12 approximately 8 million therms. We understand the
13 design life is 15 years, and simple payback is 5.3
14 years.

15 This is one that we got that Mark sent
16 us advance information about. And GAMA liked the
17 idea of a standard, but they'd rather have it as a
18 federal standard.

19 He also mentioned, I think, that the
20 GAMA, working together with other folks in the
21 industry, we also planning to have a requirement
22 for intermittent ignition devices. And although
23 we don't have that, we'd have the effect of one,
24 because we have a standby loss standard. So we're
25 pretty close on that except that he would rather

1 the action we take here be taken in the Forrestal
2 Building in Washington, D.C.

3 ASSOCIATE MEMBER ROSENFELD: Before we
4 get started, could somebody, you or Mark, say a
5 few words about what a power vent or automatic
6 flue damper is. I see the words and they're not
7 turning me on yet.

8 MR. KENDALL: I can try, although I was
9 much better prepared on the furnace fan topic. A
10 power --

11 ASSOCIATE MEMBER ROSENFELD: But, I'm
12 sorry, that's -- not what you're stuck with.

13 MR. KENDALL: Yeah. Power vents --
14 ordinarily, I suppose, unit heaters are natural
15 draft, so the heat from the combustion process
16 vents the combustion products out through the
17 vent.

18 If you require a power venter, you've
19 then got an inline fan that forces the combustion
20 products out so you can operate it at slightly
21 higher efficiency because that will allow you to
22 drop the temperature of the combustion product.

23 It will also enable there to be a
24 positive lock against draft in the building out
25 the vents during offcycle.

1 Automatic flue damper, same thing.
2 During the offcycle -- well, not the same thing --
3 during the offcycle it would be a damper that
4 would close to prevent air from passing through
5 the heat exchanger in the offcycle and venting
6 useful heat out through the vent.

7 ASSOCIATE MEMBER ROSENFELD: And are
8 those common or --

9 MR. KENDALL: They're widely available,
10 yes.

11 ASSOCIATE MEMBER ROSENFELD: Thank you.

12 MR. MARTIN: Should there be a federal
13 standard, of course that would preempt the state
14 standard.

15 ASSOCIATE MEMBER ROSENFELD: Sure.

16 MR. KENDALL: I have no response to
17 that. Mr. Martin did a nice job of expressing our
18 comments.

19 MR. MARTIN: Mr. Kendall did a nice job
20 of writing it down for me, too.

21 MR. NADEL: Steve Nadel, ACEEE. The
22 only thing I would add is we, too, support a
23 national standard. It's being tied up, though,
24 due to other issues, not efficiency standards for
25 which there is consensus.

1 And then in Mark's written comments he
2 says, well, gee, I have some problems with the
3 furnace fan savings. Have you done the same with
4 unit heaters. I think the differences on the
5 furnace fan savings is in the cooling mode; in
6 this case we're talking only heating savings. So
7 I would think we're going to be in close
8 agreement.

9 MR. KENDALL: Well, just like DOE has a
10 long history of over-estimating --

11 (Laughter.)

12 UNIDENTIFIED SPEAKER: Go ahead, Mark,
13 finish the sentence.

14 MR. KENDALL: I'll leave it on that last
15 line.

16 MR. MARTIN: We don't need the sentence
17 finished; we've all finished it, ourselves.

18 So I think we're ready to talk
19 refrigeration, which takes us back to the
20 beginning of the --

21 MR. BARDSLEY: Excuse me, I'd like to
22 make a --

23 MR. MARTIN: Oh, excuse me.

24 MR. BARDSLEY: I am Len Bardsley with
25 Sempra Utilities. I just wanted to let everyone

1 know that Sempra will be submitting comments on
2 the fans, unit heaters and the duct furnaces at a
3 later time, once we look at GAMA's letter and the
4 proposals in more depth. Thank you.

5 MR. MARTIN: You have copies of GAMA's
6 letter, right?

7 Okay, there are several interrelated
8 refrigerator ones, starting with number 6, which
9 is the commercial refrigerators and freezers with
10 doors. This category includes commercial package
11 refrigerators and freezers having either solid or,
12 more accurately, opaque or transparent doors.
13 There's approximately 117,000 solid-door
14 refrigerators; 72,000 solid-door freezers; 72,000
15 transparent-door refrigerators in California.

16 The approximate annual sales, solid door
17 12,960; solid door -- that's refrigerators;
18 freezers 8010; transparent-door refrigerators
19 8460. Average per unit annual baseline energy use
20 of solid-door refrigerators is 2923 kilowatt
21 hours. Solid-door freezers 6069 kilowatt hours.
22 Transparent-door refrigerators 4083 kilowatt
23 hours.

24 There are a number of different standard
25 levels being proposed, depending on the specific

1 type of refrigerator or freezer, and which
2 efficiency level and effective date is considered.

3 The average per unit annual energy
4 savings for the new efficiency standards are
5 solid-door refrigerators 777 kilowatt hours;
6 solid-door freezers 586 kilowatt hours; and
7 transparent-door refrigerators 1354 kilowatt
8 hours; transparent-door freezers 2647.

9 There is an error in the table down
10 below. The four lines, the first one is solid-
11 door refrigerator tier three; the second solid-
12 door freezers tier three; the third is
13 transparent-door refrigerators tier three; and the
14 last one should be transparent-door freezers tier
15 three.

16 Tier three is the term we've given for
17 these standards. We already have standards
18 adopted which are referred to as tier one and tier
19 two.

20 Design lives nine years, simple payback
21 varies with type. But, the biggest of those is
22 2.22 years.

23 So that's the ones with doors. I think
24 maybe I should go through the ones without doors,
25 too, before we get various comments involved here.

1 For those without doors, which are also
2 referred to as open-case refrigerators, they're
3 divided into two groups in the regulations. Those
4 designed specifically for the display and sale of
5 bottled and canned beverages, and those that are
6 not so designed.

7 The former group serves an identical
8 purpose as commercial refrigerators with
9 transparent doors that are specifically designed
10 for the display and sale of bottled and canned
11 beverages. And so staff is recommending the same
12 minimum performance standards be applied to both
13 types of unit. There is an error in table 16053-A
14 where this particular intent is not carried out
15 correctly.

16 The proposed standard for all other
17 models of commercial refrigerators and freezers,
18 that's to say the ones that are not specifically
19 designed for bottled and canned beverages, are
20 limited to provisions related to lighting
21 efficiency.

22 There's approximately 178,000 open-case
23 refrigerators and freezers in use. About a tenth
24 of that number are sold each year in California.
25 The average annual per unit energy use for open

1 refrigerators and freezers is 15,000.

2 The proposed standard for open-case
3 refrigerators and freezers is a high efficiency
4 lighting standard requiring the use of T8
5 fluorescent lamps with electronic ballasts, or a
6 lighting system with equal or higher efficacy.

7 The annual per unit energy savings
8 resulting from the proposed standard is 250
9 kilowatt hours. And the statewide first year
10 energy savings resulting from the proposed
11 standard is 222,500 kilowatt hours.

12 We show a design life of ten years with
13 a simple payback of 1.26.

14 And I think we should invite discussion
15 of this one before we go on to the walk-in
16 refrigerators and freezers.

17 DR. AMRANE: Karim Amrane with ARI. I
18 have a few comments regarding the commercial
19 refrigerators and freezers with doors.

20 The Commission has lumped together all
21 type of cabinets, and there are some that are
22 designed for fast cool-down, which we feel should
23 be subject to a different efficiency standard.

24 They are designed differently. They are
25 over-sized to meet such requirements required by

1 Pepsi-Cola all over the world and Coca-Cola all
2 over the world, and we believe that the California
3 Energy Commission should have looked at that. And
4 each should have a separate class for equipment
5 designed for fast cool-down.

6 Now, regarding the effective date of the
7 standard, the Commission is proposing 2006 and
8 2007 for the tier three and tier four. And we
9 feel again, as mentioned this morning, there will
10 be major changes to the industry in 2010 to do the
11 phase-out of the HCFCs. The logical date for us
12 in industry is to set new standard no sooner than
13 January 1, 2010. Because manufacturers will be
14 redesigning the product, retooling the factories
15 to produce equipment with the new refrigerant.

16 That is all my question. My comment on
17 the cabinets with doors -- do you want to stop
18 here or go to the open doors, as well?

19 MR. MARTIN: Well, so far we have talked
20 about everything except the walk-in ones.

21 DR. AMRANE: Okay, so let me comment
22 on --

23 MR. MARTIN: The ones with doors and
24 without doors is what we're discussing now.

25 DR. AMRANE: Okay, let me comment on the

1 commercial equipment without doors. What has been
2 proposed is to set the efficiency levels at the
3 same stringency that the reach-in cabinets with
4 transparent doors.

5 And we kind of question how is this
6 possible. I mean obviously product without doors
7 are less efficient, inherently less efficient.
8 How come are we holding the to the same standard.
9 So there should be recognition that there are
10 losses due to the fact that there are no doors.
11 So that's one point.

12 But most importantly I think the
13 efficiency standards are correlated with respect
14 to volume. And now we are talking about display
15 cases and the important dimension, physical
16 dimension used by industry is not volume any more.
17 It's what's called total display area, or TDA.

18 So what we suggest the California Energy
19 Commission to do is to hold on this product; not
20 set standard at the present time. Collect
21 information on this total display area, and then
22 correlate and come up with an efficiency level.

23 But that's -- going with volume is not
24 what the industry's been doing. And by the way,
25 it's already accepted by ISO, there's an ISO

1 standard, ISO-23953 that choose TDA. The ARI 1200
2 standard also makes reference to the TDA. So, for
3 open cases that's the way to go.

4 Those are my comments.

5 MR. MARTIN: Okay. Just so I'm clear on
6 terminology here. This total display area is for
7 those that have no doors whatever, you're
8 referring to?

9 DR. AMRANE: Exactly.

10 MR. MARTIN: The display case gets a
11 little hard to be sure what we're meaning, so
12 you're not referring to ones with glass doors?

13 DR. AMRANE: No. No doors.

14 MR. MARTIN: Okay. Now, the vast
15 majority of those -- we divide them into two
16 groups. And the vast majority are the ones for
17 which we are applying a lighting provision.

18 The first group is a tiny one where
19 there's been a very -- well, everywhere you go you
20 find glass door units at checkout stands with
21 bottles and cans, mostly bottles, for sale. And
22 very few have come in recently that have no doors
23 at all. And those are the ones that we're
24 referring to, to have the same standard. They're
25 replying to the same thing. They're doing the

1 same duty that the ones with doors, but the vast
2 majority have doors on them.

3 Most door-less units, the kind of things
4 that you pick out milk or fish or whatever else
5 from, are not specifically designed for bottles
6 and cans. So this is a very small niche product
7 we're referring to.

8 DR. AMRANE: Right, and then my comments
9 were really on the concept.

10 MR. MARTIN: Um-hum.

11 DR. AMRANE: If you want to regulate,
12 fine. But the concept is you should go to TDA and
13 not volume when you set the efficiency levels.

14 MR. MARTIN: Okay, now how do we figure
15 out what the TDA is?

16 DR. AMRANE: If you look at the ISO
17 standard it's defined there. You can look at
18 the --

19 MR. MARTIN: So we should reference the
20 ISO standard for that?

21 DR. AMRANE: I mean as far as to how to
22 define TDA, you can define it in the regulations.
23 I mean that's fine. But it's there. You can look
24 it up, or I can send you a copy if you don't have
25 a copy of the ISO standard.

1 MR. MARTIN: I have a copy of it.

2 DR. AMRANE: So, it's there. I mean the
3 definition is there.

4 ASSOCIATE MEMBER ROSENFELD: Could one
5 of you explain some confusion on my part on the
6 without doors. And I recognize you're only
7 regulating the lighting, but you say in bullet
8 three on page eight, the average unit is 15,000
9 kilowatt hours a year, which is quite a lot. It's
10 like a house.

11 But then you say that the savings is
12 only going to be 250 kilowatt hours a year, which
13 is 1.6 percent. I'm sort of shocked. You know,
14 the savings on the previous page were like 30
15 percent.

16 MR. MARTIN: Okay. I would like to
17 defer to the author of this one to see if he's
18 going to give the same answer that I think I
19 understand.

20 MR. POPE: Are we talking about your
21 products now, or my products?

22 MR. NADEL: That's what I was about to
23 say. I worked on number 6, not so much on number
24 7. The only part of 7 I worked on was that small
25 category of ones where there is a proposal for a

1 refrigeration standard as well as a lighting
2 standard.

3 But I think the answer is for most of
4 the products in number 7 we're only, at this
5 point, regulating lighting because there is not
6 adequate data on the products to get into
7 refrigeration performance.

8 ASSOCIATE MEMBER ROSENFELD: So in that
9 case it really doesn't matter whether it's total
10 display area or volume, because neither enters?

11 DR. AMRANE: For those, yes. But there
12 are products for which there is an efficiency
13 standard correlated with volume --

14 ASSOCIATE MEMBER ROSENFELD: That's this
15 little niche that Steve talked about.

16 DR. AMRANE: Little niche. But just the
17 principle, I think we should go with TDA because
18 that's the way industry is doing.

19 MR. HOROWITZ: Noah Horowitz, NRDC.
20 Karim, I have a question for you. These cases
21 which don't have doors where we're talking about
22 setting a standard for the lights, do those
23 typically have an on/off switch for the lights
24 and/or some sort of control? Because many stores,
25 especially corner stores, are closed at night.

1 And if the lights are left on that would be a
2 travesty, so.

3 DR. AMRANE: I think some of them do.

4 MR. HOROWITZ: Would you be opposed to a
5 requirement of the simple on/off switch or some
6 control that they could automatically be turned on
7 and off? That would preserve the lamp life, too.

8 DR. AMRANE: I'll have to consult on
9 that, you know. First hand, no, I mean -- we'll
10 find comment if you want input from us on this
11 particular issue.

12 MR. HOROWITZ: That would be welcome,
13 and I'd like to --

14 ASSOCIATE MEMBER ROSENFELD: Maybe we
15 could ask you officially if you could look at
16 that.

17 DR. AMRANE: Okay.

18 MR. HOROWITZ: Thank you.

19 ASSOCIATE MEMBER ROSENFELD: Steve.

20 MR. NADEL: Yeah, a couple of comments
21 on this, reactions to what's been said.

22 Karim suggested that there should be a
23 separate product class for product with rapid
24 cool-down; that Coke and Pepsi in their specs
25 require a more rapid cool-down than at least some

1 other users. You know, I think the assumption is
2 the fact that we have warm Coke and Pepsi on the
3 truck and on a hot September day here in
4 Sacramento, and you need to cool it down quickly.

5 I agree that can have some impact on
6 energy use; however, market for these beverage
7 merchandisers, as they're called, is dominated by
8 two manufacturers. We have a situation now where
9 one manufacturer's products can easily meet the
10 standard, even with the rapid cool-down. The
11 other manufacturer cannot.

12 In fact, the manufacturer who can easily
13 meet it, some of their products actually meets
14 what's called C tier two, which is a level roughly
15 20 percent even more stringent than the standards.

16 So, at least one of two major
17 manufacturers can easily meet this. So, at this
18 level I'm not sure you need to differentiate it.

19 If at some point in the future you
20 wanted to tighten the standard further, call it a
21 tier four, you may want to look at that. But at
22 least based on the products of this one major
23 manufacturer, I would think you don't need to
24 differentiate at this point in time.

25 In terms of effective date, I understand

1 that there is some benefit to the manufacturers of
2 switching over refrigerant at the same time they
3 retool for efficiency. However, for these levels
4 of efficiency, 2010 might be a long time. Roughly
5 speaking, half the products now on the market do
6 meet these standards today.

7 My question for Karim, and this would be
8 something he'd probably want to check with his
9 members on, I don't want to put him on the spot
10 now, if we went all the way to 2010 would you be
11 willing to suggest a stronger standard in exchange
12 for waiting as long as you're suggesting that we
13 do? So, if you could check with your guys.

14 DR. AMRANE: We will.

15 MR. NADEL: Regarding the no-door units,
16 and I'm talking specifically here about that niche
17 product where they are for beverage display, the
18 last time I looked at the CPC database there were
19 two products listed in this. One of the products
20 did pass the standard, one did not. It's a pretty
21 small sample size; it's based on volume. I
22 imagine that it would be relatively easy -- it's a
23 single manufacturer. I might point out the same
24 manufacturer has less efficient glass-door units.
25 And maybe they could just provide total display

1 area and we could see if something workable could
2 be developed.

3 I would point out, however, that I
4 believe the proposed standard for these no-door
5 units is the tier two glass-door units standard,
6 not the tier three glass-door standards. So there
7 is a recognition that without doors you can't
8 quite get the performance that you can with doors.

9 DR. AMRANE: We'll have to check on
10 that, because I don't --

11 MR. NADEL: I need to check on that.
12 No, that's what was in the case study. I'm not
13 positive if that's what ultimately made it into
14 the staff draft.

15 DR. AMRANE: They look the same to me.

16 MR. NADEL: The only other thing I would
17 add is I believe all of this equipment does have
18 an on/off switch for the lights already. We
19 should reconfirm that, so your question might be
20 does it make sense to have some type of more
21 automatic control.

22 MR. MARTIN: Okay, I think I should
23 clarify that how to treat these refrigerators is
24 one where Steve and I didn't agree. And we did
25 agree that we have consultants, and that we don't

1 have to necessarily take their advice. And so --

2 (Laughter.)

3 MR. MARTIN: -- that's why -- I wrote
4 the text that I read to you. And Jim Holland,
5 while I was on vacation, put the numbers in.
6 Which is why they don't match. So there's an
7 error that needs to be figured out there. So if
8 doesn't add up right, you're right.

9 DR. AMRANE: Well, the levels are the
10 same as the general first 2006 levels for
11 transparent doors, they are the same?

12 MR. MARTIN: You've got the --

13 DR. AMRANE: I'm talking about the --

14 MR. MARTIN: The staff report says one
15 thing and the --

16 DR. AMRANE: And the other one says --

17 MR. MARTIN: -- and the regs say --

18 DR. AMRANE: -- I'm looking at the staff
19 report.

20 MR. MARTIN: -- say something else.

21 DR. AMRANE: Yeah, the reg says --

22 MR. MARTIN: Eventually, the Committee's
23 going to have to decide who to go with.

24 MR. HOROWITZ: Karim, I'm sympathetic to
25 retooling costs and wanting to do that all at

1 once. And to better understand your request for
2 2010, is it simply using better compressors and
3 things like that where it's simply buying a
4 different component, which would lead me to think
5 you don't need to wait till 2010.

6 Could you educate me on that?

7 DR. AMRANE: It's the redesign,
8 basically the unit will have to be completely
9 redesigned for the new refrigerants. Most of the
10 industry is switching to 410A refrigerant. And
11 that requires major redesign changes.

12 And so here we're asking the industry to
13 redesign for 2006 and 2007. And by the way, we
14 started 2003, 2004; not we're talking about 2006,
15 2007. And now we, you know, phase out in 2010.
16 So I mean, it's too many redesign the
17 manufacturers have to go through. That's why we
18 prefer to wait until 2010 and do it at once.

19 MR. FERNSTROM: I have a question,
20 though. Is it not true that in the appliance
21 business dealing with refrigeration equipment that
22 a lot of times changes are evolutionary? I
23 understand that changing refrigerant is a major
24 redesign.

25 But these little tweaks that have to do

1 with energy efficiency, it seems to me, are
2 evolutionary more than revolutionary. And
3 therefore, you know, they might occur on a more
4 frequent basis and be less costly than the major
5 deal for refrigerant change.

6 DR. AMRANE: It could, that's true. But
7 in this particular case, I mean, we've been asked
8 of the industry to redesign so frequently that
9 (inaudible) industries we would like to have more
10 time to be ready for this new standard.

11 And since it happens that we are, we're
12 going to be phasing out refrigerant in 2010, that
13 that seems to be a logical time to do it.

14 MR. NADEL: On this issue, yes, some
15 manufacturers might be able to tweak their
16 products to reach these standards. Some
17 manufacturers that had pretty inefficient products
18 to start with have already done a bunch of the
19 easy tweaks, and they might have to redesign.
20 Even within manufacturers there will probably be
21 some yes, some no.

22 The other thing I'd point out is when
23 you do do a redesign, that's often an opportunity
24 to get dramatic energy savings, much lower costs.
25 As an example, written up in the case study of a

1 manufacturer that actually cut their energy use by
2 60 percent for these products at zero incremental
3 cost. Meaning when they redesign they've got
4 enough ways to cut costs that they can pay for the
5 better compressor, better fans and motors, et
6 cetera. Which is one of the reasons I was asking
7 if we wait till 2010, because they will have all
8 these advantages, maybe could we do something
9 stronger.

10 DR. AMRANE: Right. Well, we'll check
11 on that, too.

12 MR. POPE: I have probably another case
13 where staff may not agree with the PG&E position,
14 but I just wanted to note on the record that for
15 the open-case refrigerators, I should say
16 refrigerators without doors, and it says products
17 you find in a grocery store, we were also
18 proposing that in addition to a lighting standard,
19 perhaps the Commission might consider a
20 requirement for ECM or equivalent motors for the
21 blower.

22 DR. AMRANE: I think industry will not
23 like the idea at all. I mean we don't want to
24 have prescriptive standards. Give us performance
25 standard and let manufacturers design to it. But

1 don't tell manufacturers what kind of component or
2 what kind of motor they need to put on their
3 products.

4 MR. POPE: I imagine the efficiency is
5 still not sufficiently flexible. This wasn't
6 specifying ECM, just specify efficiency level.

7 DR. AMRANE: Exactly, just specify an
8 efficiency level and let manufacturers design to
9 meet that level. But don't tell them they have to
10 choose certain components.

11 MR. POPE: By the way, I should mention
12 that would be a tremendous, quite cost effective
13 savings, based on the analysis we've done.

14 MR. MARTIN: Are we ready for walk-in
15 refrigerators? Number 8, walk-in refrigerators
16 and walk-in freezers are refrigerated spaces that
17 can be walked into.

18 (Laughter.)

19 MR. MARTIN: Walk-ins can range from
20 less than 50 square feet of floor space to several
21 thousand square feet of floor space with ceiling
22 heights from 8 to 30 feet. Approximately 100,000
23 in California. Approximately 3960 refrigerators
24 and 2040 walk-in freezers are sold each year.
25 Average per unit baseline energy use for walk-in

1 refrigerators is 42,400 kilowatt hours per year
2 for a 240 square foot structure. And for walk-in
3 freezers it's 15,600 kilowatt hours per year for
4 an 80 square foot structure.

5 There are a number of design standards
6 being proposed for walk-in refrigerators and walk-
7 in freezers, which include automatic door closers,
8 triple-pane glass with reflective treated glass or
9 gas-filled for transparent doors; anti-sweat
10 heater controls for transparent doors; envelope
11 insulation of at least R28 for refrigerators and
12 R36 for freezers.

13 Electronically commutated evaporative
14 fan motors or evaporator fan motors having the
15 same or better efficiency as an electrically
16 commutated fan motors. Or evaporative fan motor
17 controllers (inaudible) evaporator fan motors --
18 excuse me. And ECM type motors, or motors with
19 equivalent efficiency. For all self-contained
20 compressor condenser units that are dedicated to
21 the walk-in cabinet.

22 There's a potential per unit annual
23 savings of 13,377 kilowatt hours for walk-in
24 refrigerators; 5097 kilowatt hours for walk-in
25 freezers. First year statewide energy savings 53

1 million kilowatt hours for walk-ins,
2 refrigerators. And 10.4 million kilowatt hours
3 for walk-in freezers.

4 We show a design life of ten years.
5 Payback for refrigerators 0.9. And for freezers
6 of 2.3. All very cost effective.

7 Which I can sense is good practice; it
8 is probably being done in a lot of places today.

9 ASSOCIATE MEMBER ROSENFELD: Sorry,
10 Michael, didn't hear your last sentence.

11 MR. MARTIN: I sense that these kind of
12 obvious things, that a lot of people are already
13 doing today.

14 DR. AMRANE: Just a few comments on
15 this. There's probably some energy to be saved
16 with walk-ins; however, again, I'm going to go
17 back to this prescriptive versus performance
18 standard. I think, as far as the industry is
19 concerned, we'd rather have a performance standard
20 than a prescriptive standard.

21 I understand that the Commission is
22 leaning towards a prescriptive standard because
23 there are no performance standards available
24 today. If that's the case, then we suggest that
25 the Commission develop one. And we're willing to

1 work with the Commission on this.

2 But we feel that prescriptive standards
3 are against innovation. And that's not the way to
4 go.

5 MR. MARTIN: Would you be in a position
6 to help us come up with a performance standard?

7 DR. AMRANE: I think we could, yes.

8 MR. MARTIN: Well, that's wonderful,
9 you're the first person who's said that.

10 DR. AMRANE: Well, we could try. I mean
11 we --

12 (Laughter.)

13 MR. POPE: I am sympathetic to what
14 you're talking about, performance versus
15 prescriptive. In looking at this, though, the
16 walk-in refrigerator market -- refrigerator cooler
17 freezer market is unique in that a lot of these
18 products are build onsite, custom manufactured.
19 And so it becomes much more of a title 24 flavor
20 to it.

21 Our sense was the cost to manufacturers
22 would be exorbitant to try and either, you know,
23 test a structure as large as this in an ambient
24 chamber; that would be prohibitive. Alternatively
25 you could create a modeling approach, which is

1 probably what you're thinking about. Again, we
2 were concerned about costs. And we figured, gee,
3 most of these things are low cost. Admittedly,
4 they're prescriptive, but they're low cost, so
5 it's probably easier and cheaper just to do that.

6 But we'd certainly entertain a dialogue
7 with --

8 DR. AMRANE: I mean long term, I think
9 we should go to a performance standard. You know,
10 maybe --

11 MR. POPE: Great.

12 ASSOCIATE MEMBER ROSENFELD: Ted, I
13 don't think there's a conflict. I mean this comes
14 up all the time in the building standards. And we
15 have a default which has your or my favorite low-E
16 doors and efficient motors, and you calculate a
17 total energy bill for cubic foot or whatever. And
18 if the designer wants to do it no feet, that way,
19 he can do it. But if he wants to beat the system
20 by being smart, he uses the alternative for
21 compliance and models it and is rewarded for his
22 genius, right?

23 So, I don't see that there's much of a
24 conflict. I think we solved that problem. Bill
25 Pennington's about to tell me I'm wrong.

1 MR. PENNINGTON: It took us about 15
2 years to develop a model for building standards,
3 so it's not trivial to develop a simulation
4 approach for appliances.

5 ASSOCIATE MEMBER ROSENFELD: But Karim's
6 willing to help us --

7 (Laughter.)

8 DR. AMRANE: Willing to help.

9 MR. POPE: If I could just -- yeah, I
10 don't see -- I agree with what you're saying. I
11 just, our sense in talking to manufacturers we
12 contacted, I think, you know, this is a real
13 competitive market and I can't speak for all the
14 manufacturers, but our sense in talking to a
15 sample of them was, gee, we're not opposed to
16 this. You know, it's the customer that expects
17 the details of the structure. And, sure, set a
18 code; that's fine with us, you know, it's up to
19 the customer to decide what they need.

20 So we thought this was the option that
21 gave a lot of savings, very low cost for what's
22 involved. And, again, the down side is somewhat
23 of the prescriptive effect.

24 ASSOCIATE MEMBER ROSENFELD: And,
25 incidentally, now that Bill's made his presence

1 known, at the beginning of the morning I thanked
2 the hard working staff and you were here to get
3 thanked, Bill. So, now you are.

4 MR. PENNINGTON: Thank you.

5 MR. MULLEN: Our heat craft
6 refrigeration group asked me to make a couple
7 comments. First is on ECM motors, to say an ECM
8 motor -- and this is, I think, to Karim's point,
9 one that was made earlier -- doesn't really mean
10 much in terms of efficiency.

11 I guess whichever the lowest efficient
12 ECM motor is that's out there would meet it. So,
13 if anything, it would be done to pin down the
14 efficiency, it certainly would be in the right
15 direction.

16 Second is that commercially proven ECM
17 motors don't necessarily exist in all the frame
18 sizes that would be required for some of the
19 reach-in and walk-in stuff. And so you may want
20 to review that if you seriously intend to
21 incorporate it.

22 The third point is on page 105, section
23 4(v), as written it's a little confusing which
24 motors would have to be ECM. I think you meant
25 the evaporator motor, but as written it could be

1 the compressor motor, which probably isn't
2 available, and maybe a condenser fan motor. So
3 probably that paragraph should be clarified.

4 MR. POPE: If I could go back, I forgot
5 to mention another issue on the refrigerators
6 without doors, again this being a product class
7 you see in grocery stores. The PG&E
8 recommendation was also test and list.

9 That we feel fairly strongly about
10 because the energy use of these products is quite
11 large. And there appear to be a number of cost
12 effective measures beyond the lighting measure
13 which, at this point, you know, is pretty high
14 penetration of the marketplace.

15 And I did mention the fan motors, and I
16 did mean evaporator fan motors. I appreciate that
17 clarification.

18 But there are a number of other
19 measures, as well. And particularly I think
20 something near 75 percent of the energy use in
21 these grocery store open case refrigerators is due
22 to ambient losses, due to the air curtain. And so
23 it appears as a large statewide savings
24 opportunity.

25 And for that reason we think, and it's

1 my understanding that ASHRAE72, which is going to
2 be replaced by 72A, provides a sufficient test
3 methodology to start tracking the energy use of
4 these different products. So, Karim might want to
5 respond to that if you'd like to, but --

6 MR. NADEL: On walk-ins it strikes me
7 that Art's idea is a very good one, to have
8 prescriptive, allow performance as an alternative
9 path if someone can show a way, yeah, my energy
10 use is no worse than a unit that meets this
11 prescriptive requirement.

12 I believe there are some current
13 computer modeling programs for the performance of
14 this equipment that could be used. I suspect
15 there may be some differences, and just like with
16 title 24, you've always had softwares taking 15
17 years to refine the rules in the software so that
18 they're highly repeatable. Yes, you may have to
19 go through similar processes, but I think there's
20 enough software available that you could start
21 that. Have a performance path and then gradually
22 tighten it up as issues come up.

23 ASSOCIATE MEMBER ROSENFELD: And do it
24 in seven years.

25 MR. HOROWITZ: Obviously we all agree if

1 we can do performance it's better than
2 prescriptive. I think for now we should adopt the
3 prescriptive approach, despite its flaws, and
4 agree to work towards the performance based.

5 And since we're in the seventh or eighth
6 inning, depending on your baseball expertise, I
7 think it's short-sighted to think we can work out
8 all the details on the performance base for 2005
9 standards. But we agree for 2008 to move there.

10 DR. AMRANE: I was talking long term.

11 MR. HOROWITZ: Okay, great. Okay, we're
12 in the ninth inning.

13 MR. MARTIN: Thank you. Talking of the
14 ninth inning, the next item is number 9. However,
15 the numbering system here is such that we're going
16 into overtime.

17 Number 9 is refrigerated bottled and
18 canned beverage vending machines. Refrigerated
19 beverage vending machines are self-contained
20 appliances with a refrigerated compartment
21 designed to hold and dispense canned or bottled
22 beverages upon payment.

23 There's approximately 450,000 of them in
24 service in California. And 37,500 sold every
25 year. The average per unit energy use is 3077

1 kilowatt hours per year. The proposed standard
2 for the beverage vending machines allows a maximum
3 daily energy consumption of 0.005 times C plus
4 4.76, where C is the rated capacity, in 12 ounce
5 cans.

6 There's a potential annual energy
7 savings of 308 kilowatt hours per unit. First
8 year statewide energy savings 12.6 million
9 kilowatt hours. Design life of ten years; payback
10 period of 1.6.

11 And these are tests at ambient
12 temperature of 90 degrees, which we've had to put
13 in there because the test method is changing to
14 have two different ambient temperatures.

15 I think this is very similar to what's
16 being done at EnergyStar, who are also very active
17 with this same thing.

18 MR. HOROWITZ: I applaud the Energy
19 Commission for using the same test method and
20 approach in EnergyStar for the active mode. One
21 piece that is missing that I'd like to see added
22 is vending machines are typically on 24 hours a
23 day. The lights are on and the beverages kept at
24 34 degrees F. And there are many occasions at
25 2:00 in the morning where no one's going to be

1 buying a soda, especially in a school. At a
2 minimum the lights should be turned off.

3 So the EnergyStar spec does have
4 language for what I'm loosely calling a standby
5 mode that allows the lights to be turned off
6 and/or the refrigeration to go into a less energy
7 intensive mode.

8 And some examples would be if a vending
9 machine is outdoors, during the day you could
10 allow the lights to not be turned on; but at
11 night, to be turned on. But the refrigeration
12 would be on continuously.

13 At a school, you know, from 7:00 at
14 night to 7:00 in the morning, the lights could go
15 off. So some sort of smart control. Many of the
16 machines already have this in there, and we think
17 this should be in all the machines, but don't
18 require some preset level because every site has
19 its own unique conditions.

20 So, in short, let's cut and paste the
21 language in EnergyStar for this low power mode.

22 ASSOCIATE MEMBER ROSENFELD: Actually,
23 Noah, if I can ask you, that's such a good idea.
24 How come it didn't get into the proposed regs,
25 Michael?

1 MR. FERNSTROM: I have a question for
2 our consultants on this. In the EnergyStar reg is
3 credit given for automatic controls of this
4 nature, with respect to adding to the energy
5 efficiency?

6 I ask that question because I think our
7 research shows that while these controls and good
8 and available, they're largely not used. And I
9 would support having the controls, but not support
10 giving energy saving credit that would take away
11 from more behind-the-wall or built-in features
12 such as the lighting proposal we've made.

13 MR. HOROWITZ: Sure. I participated in
14 the establishment of the EnergyStar spec, and
15 there was a lot of give-and-take. The
16 manufacturers -- or rather the beverage companies
17 don't like automatic controls. They would prefer
18 the lights be on all the time if it were up to
19 them.

20 So, the compromise was put in these
21 features in the school districts that are
22 motivated. They'll make sure the lights get
23 turned off.

24 When the test is done that this equation
25 is based on, all the power saving modes are turned

1 off so it doesn't get gamed. So without a sensor
2 or something being on. So you test the machine
3 with the lights on, with the beverage at 34
4 degrees.

5 MR. FERNSTROM: That's a good
6 compromise; thank you.

7 MR. POPE: Maybe this is trying to gild
8 the lily here, but one other thing that could be
9 done is the requirement of a capacitor or battery
10 backup so once these power settings are
11 established appropriate to whatever situation it's
12 in, when the power goes down, as it unfortunately
13 does every now and then, the settings would remain
14 in place when the power's back up.

15 I don't have a cost effectiveness
16 analysis to share with you on that, but it seems
17 to me that's something we should look at more and
18 get some feedback from industry on.

19 MR. HOROWITZ: I would support that.

20 ASSOCIATE MEMBER ROSENFELD: Good.

21 MR. MARTIN: Thank you.

22 MR. NADEL: Mike, I think we're ready to
23 put this hearing on ice. One last one.

24 (Laughter.)

25 MR. MARTIN: We'll do it automatically.

1 Number 10, automatic commercial icemakers. This
2 type of equipment typically consists of a case
3 insulation refrigeration system and a water
4 supply. Some models also include an ice storage
5 bin, although most systems are installed on top of
6 a separate insulated ice storage bin.

7 There's approximately 173,000 of these
8 things in service throughout California.
9 Approximately 23,000 sold in California each year.
10 Average annual per unit energy consumption 4374
11 kilowatt hours.

12 Proposed standards for this equipment
13 include both maximum energy use in kilowatt hours
14 per hundred pounds of ice; and maximum water
15 consumption for water-cooled icemakers in gallons
16 per hundred pounds of ice.

17 Estimated annual unit reduction of
18 energy use ranges from 142 kilowatt hours to 1714
19 kilowatt hours, depending on the equipment type.
20 Total statewide first year energy savings
21 resulting from the proposed standard is 6.6
22 million kilowatt hours.

23 And then we have a huge table with
24 varying standards for different designs and sizes.
25 We show a design life of 8.5 years. And simple

1 paybacks that go from 0.6 up to 4.3 years.

2 ASSOCIATE MEMBER ROSENFELD: My dumb
3 question is saving electricity I can understand;
4 given that ice is just frozen water, I don't
5 understand how you can --

6 MR. MARTIN: Well, there's some water-
7 cooled ones down in here also.

8 DR. AMRANE: A couple of comments.
9 Regarding the standards, we looked at our
10 directory we have, we list products, icemakers.
11 And we represent, I believe, almost the entire
12 industry.

13 And those levels will eliminate about 80
14 percent of the listing that we have in our
15 directory. So, it's very stringent standards, and
16 we'd like permission to reconsider.

17 ARI is willing to work with the
18 Commission on that, but we feel that as it is
19 right now, I mean you are eliminating 80 percent
20 of what's available today, which is significant.

21 When I was looking at the report that
22 was prepared, I also noticed that the shipments
23 are over-estimated, significantly over-estimated.
24 Instead of the 23,000 units, I believe, that the
25 report mentions, we feel that shipments are around

1 15,000 to 16,000 units. And we have data.

2 So, all the energy savings have been
3 over-estimated, as well. And needs to be
4 revisited.

5 Now, the same comments about the
6 effective date for the same reasons, again. The
7 phase-out of HCFCs. We'd rather have a standard
8 effective in January 1, 2010.

9 ASSOCIATE MEMBER ROSENFELD: Steve, you
10 going to ask him your question?

11 MR. NADEL: I'm going to -- a couple of
12 comments, and yes, I think Art's anticipating me.

13 I agree with Karim that this particular
14 standard would eliminate the majority of products.
15 We get more like 75 percent eliminated rather than
16 80, but similar figures.

17 All manufacturers do have products that
18 comply. Some failed the complete line, some much
19 sketchier. But, this would be a more significant
20 impact.

21 I guess one of my questions is if you're
22 suggesting 2010, does it seem like a reasonable
23 level for 2010 as opposed to, I think we had said
24 2007. Yeah, we had added more time for
25 manufacturers to come out with products.

1 DR. AMRANE: And that, again, I mean
2 I'll have to check with the manufacturers, but
3 that will be something to consider.

4 MR. NADEL: In terms of the unit
5 shipments I'd be very interested in any shipment
6 data you have. We used two sources, and I have to
7 check the details in terms of which one ultimately
8 the energy savings calculations are based on.

9 One is an Arthur D. Little study; the
10 other is census data. The census data, as I
11 recall, was higher. So you're saying the census
12 data maybe is a little too high.

13 DR. AMRANE: Right, and we've noted the
14 same thing with other products. The census data,
15 for some reason, over-estimates shipments in
16 general. And we'll, you know, what we would like,
17 you know, is for to make an official request for
18 the data, and we'll consider it.

19 MR. NADEL: ACEEE or CEC?

20 DR. AMRANE: Or CEC, yes, doesn't
21 matter.

22 MR. MARTIN: Consider yourself
23 requested.

24 (Laughter.)

25 MR. NADEL: I think he'd like it on

1 letterhead.

2 (Laughter.)

3 MR. MARTIN: Okay. We'll confirm that
4 then in writing when we put all the pieces
5 together next week.

6 MR. NADEL: So, if I understand
7 correctly, the census over-estimates sales just
8 like DOE over-estimates incremental costs.

9 (Laughter.)

10 MR. MARTIN: Okay, number 11 is the
11 water dispensers, which, unless I've
12 miscalculated, is the last one for today.

13 This category of appliance includes both
14 bottle-type and point-of-use water dispensers that
15 are freestanding and dispense both hot and cold
16 water. There are approximately 184,800 in
17 California. Annual sales approximately 23,100.
18 Average daily energy consumption of water
19 dispensers is 2.3 kilowatt hours.

20 The proposed standard is a maximum daily
21 standby loss of 1.2 kilowatt hours. Proposed
22 standby loss standard would result in a per unit
23 savings of 266 kilowatt hours annually. The first
24 year statewide savings of 6.1 million kilowatt
25 hours. Design life eight years; simple payback

1 period 0.4 years.

2 Not such a huge one compared with a lot
3 of these others, but a good payback. I'm not sure
4 if there's a trade association involved with this
5 or not.

6 MR. BIRDSELL: Walt Birdsell from Kaz.

7 Just have a couple of questions when I looked
8 through the case study, just more clarification.

9 The volume of water, is that combined
10 for both the cold and hot tank vessels of three
11 quarts?

12 MR. NADEL: We're trying to figure out
13 who was the lead on this. I was not.

14 MR. BIRDSELL: Okay.

15 MR. RAINER: Yeah, the three quarts is
16 just the cold; the hot tank is much smaller.

17 MR. BIRDSELL: Just the cold. Now, when
18 we look at what we'll call the bottle-type, the
19 information that you have in here is from 1999
20 markets. Since 1999 the market has expanded
21 grossly with now more retail items. They're
22 smaller, more compact. The water volumes are much
23 less. Do you feel that will skew your numbers
24 within your case study? And overall, should the
25 case study be changed and possibly the actions

1 that need to be taken here?

2 Are you going to go back and review
3 that, because the last three years it has just
4 exploded intensely when we look at the retail
5 market right now.

6 MR. RAINER: The market really has been
7 changing and I wish we had data on the changes in
8 the market. The market has gone -- it used to be
9 basically a lease type where it was owned by the
10 water -- the bottle distributor, and they would
11 lease the item. It's gone to a retail, available
12 directly to the consumer.

13 I would say there are a lot of compact
14 ones available, but there's still probably at
15 least as big or bigger market for the standard
16 size.

17 MR. BIRDSELL: For the standard size.

18 MR. RAINER: I don't know what the
19 standby is on the small ones. I haven't tested
20 one.

21 MR. BIRDSELL: Okay.

22 MR. RAINER: Most of this, of the loss
23 is due to the -- this is really a standard on the
24 hot tank. And I can't imagine the hot tank
25 getting much smaller than it already is.

1 MR. BIRDSELL: Okay.

2 UNIDENTIFIED SPEAKER: We're going to
3 come out with a new one very soon, so I'm not, you
4 know, giving any new information. It will be in
5 retail probably within the next month.

6 All the ones we looked at from a retail
7 standpoint, the hot tanks are very much smaller.
8 They use a smaller heating element because it's
9 more geared towards the home, not so much
10 industry.

11 When we looked at the industrial type
12 units, whether a contract or something that is
13 what you call a major appliance, there's a lot of
14 very expensive components inside. When we look at
15 everything put together, I just feel that it
16 probably needs to be reviewed again. Because I
17 believe that the retail is now, since consumers
18 could buy them directly, the wattage is much
19 different, and the make of the product could
20 possibly be different. And that's all the
21 comments that I wanted to make on that.

22 MR. RAINER: I agree that the market's
23 changing greatly, and I would like to know what
24 the new smaller units use. In this proposal it
25 does propose that they be tested and listed.

1 Given the smaller new units, I have no
2 question that they would meet this standard. So I
3 don't think it would be imposing an undue burden
4 on the new units.

5 And then with the data we would be able
6 to see whether there's different --

7 MR. FERNSTROM: So while we're on the
8 subject, I was astounded to learn in reading this
9 case study that the present appliance energy
10 standard for instant hot water heaters calls for
11 less than a 40 watt standby loss.

12 While we didn't prepare a case study
13 specifically on that, it seems to me it might be
14 worthwhile to revisit that, as well, too. Because
15 if we're talking about the InSinkerator-like
16 devices that you find in homes and offices and
17 breakrooms on sinks, a 40 watt standby loss just
18 seems excessive to keep the hot water hot.

19 ASSOCIATE MEMBER ROSENFELD: It sure
20 does.

21 MR. MORRIS: I appreciate Gary's
22 comments, but I think that the payback and the
23 analysis, the economic analysis of instantaneous
24 water use has always been done with regard to the
25 overall savings that results in not drawing huge

1 volumes of hot water through the system for
2 purposes, and also then not using additional
3 heating to heat water for boiling purposes.

4 So, I think that the economic analysis
5 needs to be rerun again, if they're going to do
6 that kind of situation. If there is interest in
7 rerunning that situation, I would appreciate, as I
8 had said before, that you would contact us. Let
9 us know, we'd be glad to work with the
10 manufacturers involved in this. We'd be glad to
11 supply information or try to help with that
12 information where we can. And help with any
13 analysis.

14 But we do think that this needs to be
15 looked at from a system standpoint, and not from
16 an individual appliance standpoint.

17 ASSOCIATE MEMBER ROSENFELD: Well,
18 Wayne, shouldn't it be looked at both ways? That
19 is, obviously what you've said is right. On the
20 other hand, it's sort of astounding that it takes
21 40 watts to keep a cupful of water -- a few
22 cupfuls of water hot.

23 MR. MORRIS: Well, first of all, I'm not
24 prepared to say that that's a correct number. We
25 didn't come here today prepared to talk about

1 instantaneous water heaters, --

2 ASSOCIATE MEMBER ROSENFELD: No, I
3 understand, it's not on the agenda.

4 MR. MORRIS: -- since they're really not
5 being proposed for change to the standards. But I
6 think if you all want to look at that situation
7 again, please, you know, just let us know.

8 MR. FERNSTROM: Okay, so consider
9 yourself contacted by at least one proponent.

10 MR. MORRIS: And we'd love to have that
11 official request from Michael to do that kind of
12 analysis. Thank you.

13 MR. MARTIN: Thank you.

14 MR. MYRICK: If that item is completed
15 I'd like to just make a general comment.

16 ASSOCIATE MEMBER ROSENFELD: You'd
17 better tell us --

18 MR. MYRICK: Wayne Myrick, Sharp
19 Electronics.

20 There was a question before about when
21 the case studies and the draft staff report were
22 put on the website. I get the automatic email
23 notification and I assume it's put on the website
24 just before the notification goes out.

25 The draft staff report I received the

1 email on Friday afternoon on May 14th. The case
2 studies I got on Friday afternoon on the 21st.

3 So essentially that material as not
4 available to a lot of people until those Monday
5 mornings.

6 And if I can regress a little bit back
7 to air cleaners, my colleagues did such a good job
8 of presenting the information I kind of missed my
9 opportunity to make a comment.

10 Sharp Electronics got into the air
11 cleaner business about two years ago, and we're a
12 very small player. We use a little bit different
13 technology than the other manufacturers. It's a
14 patented technology called plasmacluster; it's
15 kind of similar to ion generation. But it is
16 different.

17 I'm not sure how fan speed would affect
18 the efficacy of our units. I will look into it
19 and I'll provide written comment.

20 We talked about millions of units, 3
21 millions of units. You know, for us, we're very
22 very minuscule part of that. So when you talk
23 about the cost of testing, that is a burden for
24 us. I think that the numbers that Wayne Morris
25 cited, I think maybe that only addressed the

1 direct cost of having a unit tested.

2 If you start looking at some of the
3 other costs like providing samples, shipping,
4 staff time to purchase your own inventory and have
5 it shipped, you know, things like that, for our
6 initial certification testing we usually have
7 hand-made samples because it's before production.
8 We have to have staff people at the test site in
9 case something goes wrong.

10 So, for us it is a big burden. And
11 there are a lot of other additional costs
12 involved. And the CEC proposal, for a lot of
13 parts of the testing, would just about double it
14 for us.

15 My last comment has to do with the
16 rating. We are part of AHAM certification
17 program. And, you know, we're waiting for the
18 EnergyStar program to start. We will participate.
19 We participated in the development of the program.

20 So we will use the AHAM certified rating
21 on our product. And that will be the same rating
22 that will be used for EnergyStar. Based on the
23 CEC proposal we would have another rating. And
24 we're curious, what do we do with this other
25 rating that would be contradictory and confusing

1 to our consumers?

2 That's basically all the comments I
3 have, thank you.

4 ASSOCIATE MEMBER ROSENFELD: Looks like
5 we're through?

6 MR. MARTIN: I think so. Tomorrow we
7 have scheduled -- we start at 9:00 -- we have
8 scheduled the external power supplies, audio and
9 video equipment and set-top boxes. This is one
10 that there was a new case study addition that came
11 out at the last minute that we'd like to talk
12 about a little.

13 And then there is also a petition that
14 was filed related to commercial clothes washers.
15 And it's on the schedule for tomorrow, starting at
16 9:00.

17 ASSOCIATE MEMBER ROSENFELD: This is
18 where it says residential and you meant to write
19 commercial.

20 MR. MARTIN: In one place it says
21 residential; other places it says commercial. It
22 really should be commercial. It is commercial.

23 ASSOCIATE MEMBER ROSENFELD: Okay, we're
24 through? Wayne.

25 MR. MORRIS: I have a question about the

1 large, I guess you call it large residential
2 freezer units.

3 ASSOCIATE MEMBER ROSENFELD: What number
4 is that?

5 MR. MORRIS: It's included in the
6 change, but it's not included in one of the items
7 that you had that you're dealing with today. And
8 I just had a clarification point that I wanted to
9 ask about.

10 This is in page 104 of the original
11 preliminary working staff draft of May 12th. And
12 it's item 2 on that page, -- are you with me,
13 Michael?

14 MR. MARTIN: Well, give me a section
15 number.

16 ASSOCIATE MEMBER ROSENFELD: His page
17 numbers are different.

18 MR. MARTIN: Yes, okay.

19 MR. MORRIS: I believe these are
20 sometimes referred to as moose boxes. Is that the
21 proper terminology here in California?

22 But could you explain, we're trying to
23 look at this and figure out what changed. Because
24 we don't follow the wording that, I guess, -- was
25 it before it was above 30 and below 39 cubic feet?

1 And what is it -- what changed?

2 MR. MARTIN: Well, let me tell you what
3 it is now.

4 MR. MORRIS: Okay.

5 MR. MARTIN: We left that term, moose
6 box, in this very hearing room awhile back, which
7 for those who don't know, is a freezer that is
8 large enough to freeze an entire moose at one
9 time.

10 (Laughter.)

11 MR. MARTIN: And --

12 MR. MORRIS: Yes, and I'm sure there's a
13 large usage of those in California.

14 MR. MARTIN: Well, based on the
15 amusement back in the '80s on this one, I don't
16 want to extend this any further than I have to.

17 But because those were brought up there
18 was an agreement made that the freezer
19 temperatures would go up -- not temperatures,
20 volumes, would go up to 30 cubic feet; and
21 refrigerators up to 39. And this referred to
22 residential equipment.

23 When we added in the commercial stuff it
24 made this very complicated. And this may be
25 incorrect in the underlining here, but the final

1 intent is that the federal standards that we
2 quote, we're keeping our hands off. And we're
3 still for the federal standard, that 30 cubic foot
4 limit.

5 And then we've got it somewhere else for
6 adopting the same standards for 30 to 39, which I
7 thought was already adopted before. But I'm not
8 sure about that.

9 MR. MORRIS: I think it was in the CEC
10 regulations before.

11 MR. MARTIN: I will definitely get back
12 to you on this one.

13 MR. MORRIS: But I guess we were looking
14 at this wording, and I would suggest that you may
15 want to wordsmith this a little bit. But,
16 designed and sold for use by an individual. I
17 don't think -- if I understand what you're after
18 it's above 30 cubic feet, below 39 cubic feet,
19 residential units. Isn't that --

20 MR. MARTIN: Yes.

21 MR. MORRIS: -- what you're really
22 after?

23 MR. MARTIN: Exactly.

24 ASSOCIATE MEMBER ROSENFELD: This is for
25 your residential hunter?

1 (Laughter.)

2 MR. MORRIS: Apparently.

3 MR. MARTIN: Yes.

4 MR. MORRIS: Moose hunter. In
5 California.

6 MR. MARTIN: I don't think the moose
7 that you buy in Safeway are covered by this, are
8 stored in this particular unit.

9 MR. MORRIS: Right. Okay, well, we just
10 were curious --

11 MR. MARTIN: But we recognize --

12 MR. MORRIS: -- because we didn't
13 understand what we were making changes to here. I
14 mean we don't have any problems with where we
15 think you're going, but we just were struggling
16 with the language. So, I think we can get it
17 clarified.

18 MR. MARTIN: Well, we have identified
19 some problems where we've underlined and struck
20 out unintentionally. And we're going to check
21 that very carefully.

22 MR. MORRIS: Good, thank you, Michael.

23 MR. MARTIN: And this particular group
24 appears to be the worst one.

25 Now you all know about moose boxes.

CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; 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 5th day of June, 2004.

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