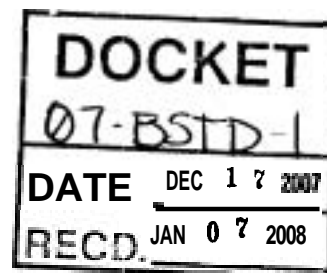


HEARING
BEFORE THE
CALIFORNIA ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:

Revisions to the 2008 CALIFORNIA
BUILDING ENERGY EFFICIENCY
STANDARDS - California Code of
Regulations Title 24, Part 1 and
Part 6

)
)
) Docket No.
) 07-BSTD-1
)
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)



CALIFORNIA ENERGY COMMISSION

HEARING ROOM A
1516 NINTH STREET
SACRAMENTO, CALIFORNIA

MONDAY, DECEMBER 17, 2007

10:02 A.M.

Reported by:
Peter Petty
Contract No. 150-07-001

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Arthur Rosenfeld, Associate Member

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Timothy Tutt

John Wilson

Mazi Shirakh

William Pennington

Gary Flamm

Bruce Maeda

David Hungerford

Rob Hudler

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Eley & Associates

Jon McHugh
Heschong Mahone Group
on behalf of Pacific Gas and Electric Company

Kenneth Nittler
Enercomp

Bruce Wilcox

James R. Benya
Benya Lighting Design

ALSO PRESENT

Kathy Hicks
Division of State Architect
Department of General Services

ALSO PRESENT

Patrick L. Splitt
APP-TECH, Inc.

Jay Salazar
City of Vacaville

Tom Garcia
City of Fairfield
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Pacific Gas and Electric Company

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California Home Energy Efficiency Rating System

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Metlund Systems
Advanced Conservation Technology, Inc.

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P R O C E E D I N G S

10:02 a.m.

PRESIDING MEMBER PFANNENSTIEL: We'll be in session. This is the workshop or hearing, actually, of the Energy Efficiency Committee of the California Energy Commission, as an opportunity to receive comment on the 45-day language on the building standards.

We have a pretty full agenda for the day, as it's described on the graphic. And so what we're asking, if you'll look through this, but after we do some opening staff remarks that will go section by section through the standards, the draft standards, and get comments and questions per section.

I have blue cards up here; I'm not sure they're actually organized that way, but we'll figure it out as we go and make sure everybody gets a chance to provide input, and that we get a full discussion. We will be here as long as we need to just to make sure that we do get everybody having a chance to comment.

We should do introductions. I'm Jackie Pfannenstiel. I am the Chair of the Energy Commission and the Presiding Commissioner on the

1 Efficiency Committee. To my left is Commissioner
2 Rosenfeld, who is the Associate Member on that
3 Committee. To his left is his Advisor, John
4 Wilson. And to my right is my Advisor, Tim Tutt.

5 With that, I think I'm going to turn
6 it -- is Mazi going to take it next? Thank you.

7 MR. SHIRAKH: Good morning. I have a
8 brief presentation on the standard changes. It's
9 going to be a very quick overview of the process
10 that we've gone through and some highlights of the
11 changes in the 2008 standards.

12 First, the standards are a significant
13 tool in meeting many of the Energy Commission's,
14 and also the Administration's and Legislative
15 mandates for achieving energy efficiency and peak
16 demand goals.

17 Some of the highlights include Energy
18 Commission's own action plan, or the IEPR; there
19 have been several executive orders by the
20 Governor; and legislative mandate including West
21 Coast Governors Global Warming Initiative, green
22 building initiative executive order and climate
23 action initiative executive order.

24 All call upon the energy -- the building
25 standards to meet the environmental and energy

1 efficiency goals.

2 The 2008 standards had many many
3 collaborators. And among them are the
4 Commission's PIER project that has provided
5 substantive funding and resources for various
6 measures that you've analyzed and proposing.

7 PGC funding through the utilities, our
8 utility partners, PG&E, SCE, Sempra and southern
9 California, and San Diego Gas and Electric have
10 provided both funds and consultant resources to
11 this process.

12 And members of the public in general,
13 various industry groups we've worked with, CABEC,
14 ARMA, ConSol, CBIA and CALBO and many others in a
15 collaborative fashion to reach the language that
16 you're going to be witnessing today.

17 Throughout the 2008 standards we've had
18 many many workshops, staff workshops, which
19 started back in 2005. And during these workshops
20 is when we presented the draft language and
21 received public comments. And we went back and
22 worked with various industry groups and other
23 stakeholders to reach consensus on the standards.

24 Next, please. This represents the list
25 of standard changes that affects both residential

1 and nonresidential buildings. The first thing was
2 to operate our time-dependent valuation levels,
3 the TDV numbers, to reflect the 2008 gas and
4 electricity costs.

5 We made changes to the administrative
6 section of the standards, 10-103 is the section
7 that describes the requirements for compliance
8 documentation reporting and filing. We've made
9 some changes to that.

10 We made changes to 10-105, which defines
11 the roles and responsibility of enforcement
12 agencies. 10-103 (sic), we clarified the
13 requirements for cool roofs and introduced the
14 concept for SRI in there.

15 And 10-114, we amended that to describe
16 the requirements for local jurisdiction to adopt
17 lighting ordinances for outdoor lighting.

18 Another change that will affect both res
19 and nonres is the introduction of the programmable
20 communicating thermostats; it's in section 112(c).
21 The PCTs will be required in all new construction
22 and some major retrofits.

23 We made revisions to section 118 which
24 are the mandatory requirements for cool roofs.
25 Made revisions to section 119 which is the

1 mandatory requirements for lighting control
2 devices.

3 Added prescriptive requirements for
4 steep-slope roofs; in 2005 we had only
5 requirements for low-slope roofs; 2008 introduced
6 steep-slope for both res and nonres.

7 And we've also made significant changes
8 to the joint appendix 4; that's the document that
9 has all the tables for walls, roofs, floors, the
10 insulation levels, the assemblies, basically, the
11 envelope assemblies. We've made many many
12 changes, updates, to those sections.

13 We reorganized the joint appendices
14 completely. Where joint appendix was only four
15 chapters long, now it's a much longer document and
16 has been reorganized into a new document called
17 the reference appendices. And what we did was we
18 migrated many other documents that were scattered
19 into other standards documents, all into one
20 place. Most of them came from the residential and
21 nonresidential appendices. And this way we've
22 restored the function of the ACM manuals in the
23 original intent, which was for compliance software
24 certification.

25 And we've worked with many industry

1 groups, including CALBO and CABEC, to alter or
2 change or update our alteration requirements for
3 additions and alterations.

4 These are the series of changes that
5 have been proposed for nonresidential buildings.
6 We have revised and made clarifications --

7 I was told that they can't hear me in
8 the back.

9 -- made revisions to section 130 to 134,
10 which is the mandatory requirements for lighting
11 systems. And if you look at those sections
12 there's a lot of edits to them; most of them are
13 clarifications.

14 We changed our complete building method
15 type of use and area category method in lighting.
16 We added new categories. We actually deleted
17 retail from the complete building method. We have
18 revised the lighting power densities or LPDs for
19 selected occupancies. We also revisited our
20 tailored lighting method, and we changed the wall
21 and floor display lighting and some of the
22 compliance procedures for the tailored lighting.
23 We think we made it simpler. And also modified
24 some of the LPDs.

25 We added a requirement for occupant

1 sensors for selected occupancies like offices, for
2 instance. We also made many improvements and
3 clarifications for nonresidential lighting
4 requirements.

5 We revised compliance credit for high
6 efficacy dimmable ballasts that are able to shed
7 load. This is a DR measure that we introduced in
8 2005; in 2008 we actually went in there and
9 refined it and changed the compliance credit for
10 it.

11 We required that large retail stores,
12 over 50,000 square foot, have certain lighting DR
13 equipment installed in them. We also revamped our
14 outdoor lighting compliance procedures in a way
15 that's supposed to be more intuitive. Gary Flamm
16 worked long and hard on that; it's called the
17 layered method.

18 And we also revisited the lighting power
19 densities for many of these outdoor lighting
20 applications. And we worked with the sign
21 industry to revise the sign compliance
22 requirements related to some of the newer
23 technologies like LEDs and that.

24 We updated our lighting control
25 schedules based on the new TDV values. And this

1 is mostly a change to the ACM manuals, actually.
2 Added acceptance requirements for outdoor
3 lighting; 2005 we introduced outdoor lighting, but
4 we didn't have acceptance requirements for them.
5 In 2008 we actually have, for the first time,
6 acceptance requirements for outdoor lighting.

7 We updated the compliance requirements
8 for side lighting and top lighting in
9 nonresidential buildings. We changed the
10 requirements for skylights so smaller buildings
11 will not have to put in skylights. So it would be
12 for buildings that are -- what's the square
13 footage, 25,000 square foot? Going down to 8000.
14 So significantly more number of nonres buildings
15 will not qualify for the skylight requirements.

16 Working with NFRC to change their site-
17 built fenestration requirement. This was a very
18 confusing process before that was not employed by
19 folks who were doing compliance for nonresidential
20 buildings. It was very time consuming and costly.
21 The staff has been working with NFRC to completely
22 revamp this process. Hopefully we'll have a
23 method in place by the effective date, or even
24 before that, that will greatly simplify site-built
25 compliance. And you can actually do compliance in

1 real time, or within a few days, at a fraction of
2 the cost that was possible before.

3 We have introduced new nonres
4 fenestration acceptance requirement, the
5 standards. That's something new that didn't exist
6 in 2005. And we have revised the cool roof
7 requirements for low-sloped roof. In 2005 we
8 introduced requirements for low-slope buildings;
9 in 2008 we worked with the industry to fine-tune
10 those requirements.

11 And as I mentioned before, we revised
12 the roof and wall and floor insulation
13 requirements. And these are all reflected in
14 joint appendix 4.

15 We revised the overall building envelope
16 compliance to allow tradeoffs between heating and
17 cooling. And we're providing some calculation
18 tools to the industry so they can easily use this
19 new method.

20 Refined acceptance requirements to
21 insure HVAC controls work properly. These were
22 introduced in 2005. We got a lot of feedback from
23 the field and people who are doing acceptance
24 requirements. So we're changing these
25 requirements in response to those comments.

1 New controls for single zoned variable
2 air volume, VAV, systems. And these requirements
3 will go into effect January 1, 2012. So there's
4 actually a delayed date for these requirements.

5 We have, for the first time, introduced
6 requirements for warehouse, refrigerated
7 warehouses. It is an entirely new section that
8 didn't exist before. And also requiring direct
9 digital control to the zone level. And other
10 improvements to energy management system and
11 control of the HVAC nonresidential buildings.

12 We have expanded the demand control
13 ventilation to a multi-zone system and exempted
14 certain occupancies from those requirements.

15 The new global temperature adjustment,
16 that's a DR measure that enables people in large
17 nonresidential building to shed air conditioning
18 load in event of a electricity shortage.

19 New requirements that hotel/motel
20 occupancies must use residential water heating
21 models. The residential model heating waters have
22 been changed significantly, and the hotel/motel
23 occupancies must meet those requirements, as well.

24 And prescriptive requirements for gas,
25 water heating and nonresidential buildings has

1 also been changed.

2 This next list are the list of changes
3 for residential buildings only. We've added new
4 Solar Homes Partnership compliance option to the
5 residential buildings, which has been one of our
6 top policy goal priorities.

7 Roof and attic modeling, the so-called
8 unconditioned zone model, or UZM, has been
9 introduced this time into the standards. And this
10 will allow much better modeling of the things that
11 are going on in the attic and related to cool
12 roofs, radiant barriers, insulation, ducts and so
13 forth. So we can get much more precise evaluation
14 of these systems.

15 We have operated the windows
16 requirements for solar heat gain and U factors in
17 2008; the 2005 standards and before that, you
18 know, we had U factors and SHGCs which were not
19 really representative of what's going in the
20 marketplace. So we brought the two in line.

21 We've clarified lighting requirement,
22 including the kitchen lighting, and some of the
23 lighting controls for residences. We've
24 introduced new mechanical ventilation requirements
25 in compliance with in line with ASHRAE 62.2

1 requirements into residences.

2 Updated swimming pool and spa
3 requirements to include two-speed pump motors and
4 time clocks. And a new energy efficiency measure
5 for furnace fans.

6 Updated requirements for air
7 conditioning and refrigerant charge verification
8 procedures. Proper air flow and thermal expansion
9 and valve treatment. In 2005 all these
10 requirements were there except that the TXV could
11 have been used as an alternative to refrigerant
12 charge verification and air flow. And we are
13 removing, or proposing to remove the TXC as the
14 option.

15 We have revised the ACM manual
16 calculation for slab heat flow and water heating.
17 And new revised compliance credit for furnace fan
18 model, HVAC sizing and duct leakage, and water
19 heating distribution systems.

20 Improving cross-flow prevention and pump
21 protection for central water distribution system
22 in multifamily buildings. And under-slab hot
23 water installation to mitigate pipe loss has also
24 been introduced.

25 As a part of 2008 standards there's also

1 going to be several compliance options. Now, some
2 of these compliance options actually started
3 before the 2008 got underway, but they will be
4 incorporated into the 2008 standards and the
5 compliance software.

6 And they include the distributed energy
7 storage, that's ICE energy, evaporative cooled
8 condensers and evaporative coolers. These are for
9 residential. And for nonres we have the
10 compliance options include the under-floor air
11 distribution systems, or UFAD. And fault
12 detection and diagnostics for air handler units
13 for VAV and rooftop. And this is a device that
14 would alert the operator there's something goes
15 wrong with the rooftop units, if the economizers
16 aren't working or the charge is incorrect. So it
17 will alert someone to take some corrective action.
18 And people will get a compliance option for this
19 device. And thermal energy storage system will
20 also be added.

21 So that was a very quick overview of all
22 the changes that we've been talking about over the
23 past several years. And with that I'm going to
24 turn it over back to the Chairman.

25 PRESIDING MEMBER PFANNENSTIEL: Thank

1 you, Mazi. The way we thought would be most
2 efficient to go through this is section by section
3 of the standards. And I have some people who have
4 asked to speak in ceratin sections. But whether
5 or not you've given me a blue card on a given
6 section, on each section we'll open it for
7 comments and questions.

8 So, starting with the standards section
9 10-101 through 109, any comments, questions? If
10 there are, please come up to the mike and
11 introduce yourself and make your comments.

12 MS. HICKS: Good morning; my name is
13 Kathy Hicks; I'm the Deputy of Policy for the
14 Division of the State Architect. I'm here today
15 to provide comments on behalf of the Department of
16 General Services and to hand-deliver a letter to
17 the Commission from the Department of General
18 Services.

19 The Department of General Services has
20 substantial concerns with the proposed amendments
21 to section 10-105 of the California energy
22 efficiency standards. We believe the California
23 Energy Commission has not demonstrated the need
24 for the proposed amendments to the existing
25 regulations.

1 We question the statutory basis upon
2 which the Energy Commission believes it can
3 require state and local agencies to make specified
4 representations and certifications to the
5 Executive Director of the California Energy
6 Commission.

7 Further, we believe that the proposed
8 amendments to section 10-105 of the Energy Code
9 are duplicative of statutory provisions set forth
10 in subparagraph (5) of subdivision (g) of section
11 25402.1 of the Public Resources Code.

12 We're also concerned the proposed
13 amendment also creates new enforcement
14 responsibilities for all state and local agencies
15 with construction oversight jurisdiction, as well
16 as creates a potential state-mandated local
17 program.

18 We believe that there will be
19 significant costs to both the state and local
20 entities involved in permitting construction.

21 There are also other technical issues
22 for the proposed language that need to be
23 addressed which we will include in a followup
24 letter that we'll provide in more detail the basis
25 of our concerns.

1 Finally, the Department believes that,
2 as drafted, the proposed regulations amending
3 section 10-105 fail to meet the standards in
4 section 11349.1 of the Government Code for
5 adopting regulations.

6 Thank you for your consideration of
7 these comments, and we look forward to working
8 with the Committee on modifications to the
9 regulations that are acceptable to both the
10 Department of General Services and the Commission.

11 PRESIDING MEMBER PFANNENSTIEL: Thank
12 you.

13 MS. HICKS: And who can I leave the
14 letter --

15 PRESIDING MEMBER PFANNENSTIEL: Why
16 don't you give it to the staff at the table.

17 MS. HICKS: Thank you.

18 PRESIDING MEMBER PFANNENSTIEL: Thank
19 you. Any other comments on sections 101 to 109?

20 MR. SPLITT: Good morning; I'm Pat
21 Splitt, President of APP-TECH, Incorporated. I
22 want to make it clear that today I'm speaking on
23 behalf of APP-TECH and not CABEC or any other
24 organization.

25 PRESIDING MEMBER PFANNENSTIEL: Would

1 you spell out APP-TECH for the --

2 MR. SPLITT: A-P-P-T-E-C-H, --

3 PRESIDING MEMBER PFANNENSTIEL: I mean
4 what it -- okay.

5 MR. SPLITT: -- I-n-c.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you.

8 MR. SPLITT: First off I'd just like to
9 comment that this happens to be about the worst
10 time you could have possibly picked to hold this
11 hearing, because besides being the holidays, it's
12 right before all the state codes change in
13 January, building codes.

14 And I know energy consultants, and I'm
15 sure building officials, too, are very busy right
16 now. And I have not had a chance to read over
17 even half of the materials. So my comments are
18 going to be limited to the parts that I have read,
19 but that doesn't mean that I probably wouldn't
20 have concerns about other things.

21 So, just for this first section, one
22 thing I have a big problem that's in section 10-
23 103(a)(3)(B), the whole idea of acceptance
24 procedures in nonres. It seems to me it's just a
25 solution for a problem that really doesn't exist.

1 If there is a problem in nonres with
2 features not being installed correctly it's
3 because the installers haven't been informed
4 adequately on what they're supposed to do.

5 The Commission has had on the books
6 requirements for installation certificates that's
7 supposed to be given to an installer and he's
8 supposed to then tick off the items that he has
9 installed and certify that they've been correctly
10 installed.

11 And it's required by law that the
12 building officials are not supposed to give a
13 final permit until they've gotten these
14 certificates.

15 Well, they don't exist. The Commission
16 has never developed the certificates. But yet you
17 don't do anything to try to get the installer the
18 information he needs, and you turn around and then
19 try to come up with these convoluted and confusing
20 acceptance procedures where somebody's supposed to
21 come in, after the fact, and check to see that
22 this guy does all these things that you never told
23 him he had to do in the first place.

24 So, what I think, if you look through
25 the acceptance procedures now for at least which

1 items actually make some sense, they shouldn't be
2 acceptance procedures. They should be procedures
3 for the installation of these devices. They
4 should be part of an installation certificate.
5 And they should be required of the installer. Let
6 him know what you want to do and he'll do it.

7 It's doesn't make any sense to have this
8 whole other industry that's being developed when
9 you haven't attempted to address the real problem.

10 So, anyway, to the extent that some of
11 those requirements for acceptance should be done
12 by someone, they should be on the installation
13 certificate, and you should require the installer,
14 and require the installer. Right now you have a
15 whole list of people who may sign these acceptance
16 forms. Well, each one of those individuals says,
17 well, it's not my job, somebody else will do it.
18 Well, nobody does it.

19 You have to make it somebody's
20 responsibility if you want somebody to do it. So,
21 I won't say any more about that; i might come back
22 to it later. But, anyway, so get rid of
23 acceptance procedures and make it installation
24 certificates.

25 There's also a section 10-103(d). This

1 is the area where the requirements for the
2 enforcement agencies are supposed to be listed in
3 the Administrative Code, the requirements for the
4 building department.

5 A building official, if he wants to know
6 what he's supposed to do to enforce the code he's
7 going to look in this section and only in this
8 section. But you've got requirements for building
9 officials spread all over the Administrative Code,
10 all over the appendices, all over creation.

11 Well, none of those are binding. It's
12 just wasted words. If there's anything that you
13 are going to require a building official to do, it
14 has to be in section 10-103(b). Nowhere else. A
15 building official is going to read that; says this
16 is what the code says I have to do. If it isn't
17 there he doesn't have to do it. You got to fix
18 that.

19 So, anyway, that's all I have on this
20 section.

21 PRESIDING MEMBER PFANNENSTIEL: Thank
22 you, sir.

23 MR. SALAZAR: Jay Salazar, City of
24 Vacaville Building Official. I have four points
25 that I would like to make related to these

1 particular sections. I want to summarize them
2 first.

3 First point I'd like to ask the
4 Honorable Chairperson and Commissioner to consider
5 is building officials in the State of California
6 are the implementation arm of the energy
7 standards. There has been some controversy about
8 building officials and enforcement at the local
9 jurisdiction and whether we've succeeded in
10 successfully implementing the standards over the
11 years.

12 One consideration that I'd like the
13 Commission to take into their analysis on these
14 issues is that we, beginning now and in the
15 future, as building officials, need to be
16 considered as equal partners with Energy
17 Commission Staff. Not simple participants in a
18 public hearing process.

19 We cannot effectively implement the
20 standards when we are simply just another voice in
21 the process asking staff to make changes. We
22 realistically evaluate staff's proposals. We
23 realistically give them feedback on whether those
24 proposals can be adequately enforced at the line
25 level, at the front level where we do the

1 enforcement.

2 And relatively consistently staff is
3 swayed by all sorts of pressures related to
4 implementation and recommendations of standards
5 and changes to the standards. Often our comments
6 are not included, not out of anyone's fault but
7 because of the various pressures placed on staff
8 in creating new standards.

9 So, for the first point, we'd like the
10 Energy Commission to seriously look at building
11 officials as an equal partner in getting this very
12 important job of compliance with the standards
13 done, once the Commission passes the set of
14 standards.

15 The second point is related to the
16 timing of this process. As you know, the
17 California Building Standards Commission has
18 implemented new building standards. Local
19 building officials are stretched to the maximum
20 amount they can be stretched to in terms of trying
21 to train and implement the current building
22 standards.

23 We have barely had time to sufficiently
24 review the proposed standards on a regular basis.
25 We really appreciate staff's efforts at trying to

1 keep us informed, but we simply don't have the
2 resources to devote the necessary time to evaluate
3 these important public policy and implementation
4 issues in the limited scope of time we have
5 currently.

6 So, I ask, as a building official, that
7 you postpone adoption of these standards until
8 July of 2008 and give every building official in
9 California the chance to give adequate feedback on
10 these standards.

11 The third point. A lot of the wording
12 in the current standards has fiscal implications
13 for local jurisdictions. Those implications have
14 been brought forward to the staff through emails
15 at various times through this process.

16 That would be another reason why we
17 would ask that we postpone the adoption of these
18 current standards until July so that we can
19 adequately investigate the fiscal impacts that the
20 wording of the standards have at the local
21 jurisdiction.

22 Simple wording that includes
23 verification and acceptance has time and motion
24 cost and benefits to local jurisdictions. We've
25 asked staff to show us in any way they can what

1 are the cost/benefits to some of the wording in
2 the new standards. And they've been unable to
3 provide that.

4 So we would like to give them additional
5 time to show us what cost/benefit would be to the
6 wording related to additional compliance standards
7 and acceptance standards in the proposed
8 standards.

9 And the fourth process, I know that the
10 staff report just recently mentioned that they
11 simplified some of the inspection process for
12 fenestration. It's simply not enough.

13 Building officials in the State of
14 California, at least the ones I've met with, and
15 as in my own case in the City of Vacaville,
16 honestly believe that the standards are too
17 complicated to enforce currently at the inspection
18 level.

19 We have consistently over the last two
20 years recommended keeping all the complexities and
21 options available in design and plan review.
22 That's not the problem. The problem is we have
23 evolved the standards such that they're unbearably
24 complex for the level of education and training
25 for the individuals who have to do the job on a

1 day-to-day basis out in the field. And that
2 message we've repeated over and over and over
3 again to staff.

4 Those are the four main points. Again,
5 implementation as partners; move the adoption of
6 the current standards to July of 2008; recognize
7 that the new wording in the current standards has
8 fiscal impact to local jurisdictions; and finally,
9 we need to do more to simplify the standards at
10 the inspection level.

11 Thank you.

12 PRESIDING MEMBER PFANNENSTIEL: Thank
13 you.

14 MR. GARCIA: Hello; my name's Tom
15 Garcia; I'm the building official for the City of
16 Fairfield. I'm also on the Board of the
17 California Building Officials organization, and
18 I'm here representing CALBO.

19 I would reiterate part of what Jay said,
20 so I won't go over all of what he said, but a
21 couple of points that I'd like to make.

22 Looking at sections 10-103(a)(3) and 10-
23 103(d)(2). Those two sections talk about the
24 installation certificates and certificates of
25 acceptance.

1 And my point is I've talked to the
2 Energy Commission Staff and said building
3 departments don't want to be responsible to hold
4 all of the certificates for every project that's
5 out there. You pretty much set us up for failure.

6 And what this means for a building
7 department is that anytime any person can come off
8 the street and say, I want to see the certificate
9 for my property. Seems like a good idea that they
10 should have that availability, but it puts an
11 additional burden on the building department staff
12 to now go into archives, find the material for
13 them, explain it to them, walk through the
14 process, tell them what it means. And then argue
15 or kind of try to show them that their standards
16 were met on their property.

17 You know, I submit that if the Energy
18 Commission wants to have this stuff collected,
19 then the Energy Commission should set up a site
20 where they collect and hold the material, and let
21 the building departments do the enforcement and
22 learn the codes and spend our time doing
23 enforcement of standards.

24 I think our time would be much better
25 spent if we could have better tools for education

1 and spend our time actually inspecting out in the
2 field rather than trying to dig up forms and talk
3 to people about whether or not the forms were put
4 into their house.

5 Right now, and one of the best things
6 that the Energy Commission ever did, was they
7 developed a CF1 for residential, and then the
8 ENV1s and MECH1s and lighting 1s, all of those
9 forms, because those become the standard for
10 what's built. Those are mandated to be on the
11 plans.

12 And if you have a CF1 that specifies all
13 of the things that the structure has to have, then
14 the structure has to be built to that standard.
15 We do all of these forms at the end, but all we're
16 really doing is showing that, yes, those things
17 were installed to the CF1 or to the ENV1 or the
18 MECH1.

19 So I, again, would submit we need to do
20 away with some of the acceptance criteria, put the
21 burden on the contractors, train the contractors,
22 make the standards simple for inspectors to be
23 able to enforce. And we'll get a lot better
24 product and a lot better energy savings.

25 Again, the standards are just becoming

1 unwieldy. It started out in 1981 when I started
2 doing this business, we had about a half-inch
3 thick energy standards and a couple of books that
4 were maybe an inch thick on how to use these
5 standards. We now have 2000 pages.

6 And Jay Salazar works in Vacaville, I
7 work in Fairfield, we're ten miles apart. We both
8 work very hard to make sure that the standards are
9 enforced, as well as accessibility standards,
10 building standards, structural safety standards,
11 all of these things.

12 So with the time that we have to do this
13 Jay and I may be able to go through those 2000
14 pages of documents, although I haven't had time
15 yet because, as somebody else stated, we're
16 adopting new codes this year and I've been very
17 busy working with counsel and contractors and
18 trying to educate on all of the additional codes
19 that we're adopting.

20 So, somehow we need to simplify this
21 process. We need to get this down to some
22 packages that the contractor can understand. We
23 need a "Readers Digest" version of this that a
24 contractor can understand.

25 And I believe that myself, I'm on CALBO,

1 I'm also on the energy committee for CALBO, I'm
2 committed to save energy in this state. I saw a
3 presentation that Panama gave at the CABEC
4 conference, a 15-minute presentation that talked
5 about how much energy we need to save by the year
6 2050, 2020, 2030 and so forth. And it's a very
7 moving argument that he puts out in a 15-minute
8 presentation.

9 And so, you know, I believe in this. I
10 will work with the Energy Commission. I will work
11 through CTI, which is the education portion of
12 CALBO, to help make the standards enforceable.
13 But I would tell you right now that most of the
14 building departments in the state don't even
15 understand the 2005 standards. And we're talking
16 about stepping up and adding things that are going
17 to be complex and hard to understand with this new
18 set of standards.

19 I don't want to ramble. I could
20 probably talk for 30 more minutes on this. But I
21 would say to you the first step you need to make
22 today is to postpone these standards to give
23 CALBO, CABEC, the Energy Commission and other
24 parties time to work these details out.

25 Don't specify that residences now have

1 to have mechanical ventilation and leave it up to
2 anybody in the world to try and figure out what
3 that means. I saw one solution that said, well,
4 you can put a bathroom fan in the house and leave
5 it run all the time, and maybe run some ducts to
6 some other rooms to pull some air through the
7 house. That's a terrible way to put something
8 into the standards and not have a solution.

9 There's probably only one -- maybe one
10 manufacturer that can actually have a unit that
11 pulls in outside air right now. We should go
12 through the process of making sure that the people
13 that provide these HVAC units can actually pull
14 outside air into a house and do it properly and
15 make it work.

16 So, thank you for your time. Any
17 questions?

18 PRESIDING MEMBER PFANNENSTIEL: No, but
19 thank you, Mr. Garcia.

20 MR. GARCIA: Thank you.

21 PRESIDING MEMBER PFANNENSTIEL: Other
22 comments on these sections, 101 to 109?

23 Moving on to sections 110 to 119, I do
24 have a comment, a blue card from Gayatri Schilberg
25 from TURN.

1 MS. SCHILBERG: Thank you. My name is
2 Gayatri Schilberg; I work for JBS Energy and
3 represent today TURN, The Utility Reform Network,
4 an organization that represents residential and
5 small commercial ratepayers.

6 We filed some written comments on Friday
7 and I won't go through them in detail. But I
8 wanted to discuss specifically section 112(c), the
9 requirements for programmable communicating
10 thermostat, PCT.

11 As I researched this project it appears
12 to me that the project of putting the PCT in
13 residential new and some retrofit residential
14 homes, is not adequately defined because the goal
15 is to achieve peak reductions in megawatts, a very
16 laudable goal. But a PCT, by itself, will not do
17 that.

18 Other elements are also needed. The
19 communication system from the utility and the
20 acquisition of a customer who is willing to go
21 along with this program.

22 According to my reading of the documents
23 that support -- the cost/benefit analysis that
24 supports the PCTs, I can only locate the costs for
25 the hardware, itself, the device, and the

1 installation in the home. There is no cost for
2 the utility system or any sort of system to give a
3 signal that it's peak day; nor is there any cost
4 for acquiring the customer to acquiesce to this
5 program of having his thermostat adjusted.

6 These costs, indeed, can be significant.
7 At the Public Utilities Commission PG&E just filed
8 a new AMI application where they're figuring it's
9 going to cost \$77 to acquire a customer for a
10 program like this.

11 And the costs for the communication
12 portion, utilities such as Edison and PG&E are
13 planning to do with their AMI application, their
14 advanced metering infrastructure, but those costs
15 also are very significant.

16 So my assessment of the data that I've
17 been able to locate is that the cost/benefit
18 analysis and the project, itself, is only defined
19 as a portion of what the full project is.

20 However, the benefit, which is the peak
21 reduction in megawatts, is being attributed solely
22 to the PCT hardware and installation. But, as I
23 just said, the PCT, all by itself, cannot achieve
24 these peak megawatt reductions. There are other
25 elements that are essential to this project before

1 those reductions can be achieved.

2 The other problem then is the other
3 essential component, the communication portion,
4 which is being examined at the Public Utilities
5 Commission, in the case of Edison and PG&E looking
6 at their AMI systems, those applications are
7 taking credit also for the same megawatt
8 reductions that are being taken credit for here at
9 the Energy Commission in the cost/benefit analysis
10 for the PCT hardware.

11 So now we have two proceedings in front
12 of two different agencies, two sets of costs, the
13 PCT and the communications, and the customer
14 acquisition, but they're both alleging the same
15 benefits. So we've double counted. By
16 piecemealing the project we're double counting the
17 benefit.

18 The consequence then if both of these
19 aspects go forward and no one remedies what
20 they're doing, is that ratepayers will be paying
21 twice for the same set of benefits, which TURN
22 finds an unacceptable outcome.

23 Therefore, we're suggesting at least, if
24 you can't analyze the whole project, which is the
25 hardware and the customer acquisition and the

1 communications, then at least put in costs for
2 modest, the minimum communications and the minimum
3 customer acquisition. And then anything
4 incremental can be analyzed at the PUC in the
5 proceedings regarding AMI.

6 Thank you.

7 PRESIDING MEMBER PFANNENSTIEL: Thank
8 you.

9 ASSOCIATE MEMBER ROSENFELD: Gayatri,
10 good morning.

11 MS. SCHILBERG: Good morning.

12 ASSOCIATE MEMBER ROSENFELD: First, I
13 haven't had time to respond to your letter in
14 detail; it only came Friday and the staff did work
15 most of the weekend but had a few other things to
16 do.

17 I'm going to make a word or so about the
18 double-counting problem, and then ask Dave
19 Hungerford, who's the head of our demand response
20 team, to make a few comments, too.

21 I don't see the double counting quite
22 the way you do. The PUC certainly is responsible
23 for deciding whether the whole AMI system is cost
24 effective. And they have done that, and
25 ratepayers will pay for the advanced meters.

1 And, as the Energy Commission observed,
2 that if a customer installs a PCT he will -- he or
3 she will be able to save money by responding to
4 the signal. But we're not raising the rates. We
5 don't have any power to make ratepayers pay for
6 this.

7 We do observe that it is very cost
8 effective to install a PCT in a new home,
9 thermostat costs something like \$50 or \$60; the
10 PCT will cost an additional perhaps \$40. The
11 ability to respond and save electricity will
12 involve saving electricity at pretty cheap rates,
13 5 cents a kilowatt hour or something, on a peak
14 afternoon. So we think it's cost effective.

15 So, we will respond to you about the
16 double-counting issue, but that's my view.

17 But David Hungerford is sitting at the
18 back of the room. David, do you want to make a
19 couple of comments? It's so crowded he had to sit
20 around the partition.

21 MR. HUNGERFORD: I'm David Hungerford
22 with the California Energy Commission. And I just
23 wanted to thank TURN for pointing out some of the
24 lack of clarity in the language. And we will
25 respond directly to some of the concerns that you

1 have raised. And we appreciate the opportunity to
2 make our position clear and our analyses more
3 effective.

4 And, as Art said, we got your letter on
5 Friday, and so we will work to respond to it in a
6 timely manner. Thank you.

7 PRESIDING MEMBER PFANNENSTIEL: Thank
8 you, David. We have somebody else in this area,
9 Gordon Roessler of Tyco Thermal Controls, who
10 would like to speak to section 113(a).

11 MR. ROESSLER: Good morning. I had
12 three specific questions on section 113(a)(1)
13 specifies temperature controls for service water
14 heatings. The exception is residential
15 occupancies. Are those defined as the CEC defines
16 residential occupancies or ASHRAE defines
17 residential occupancies?

18 I think the CEC defines residential
19 occupancies as hotels, motels, highrise
20 residential. And those buildings should also have
21 temperature controls I would assume.

22 So.

23 PRESIDING MEMBER PFANNENSTIEL: Mazi or
24 Bill, do you want to respond to that?

25 ASSOCIATE MEMBER ROSENFELD: Mazi, we

1 can't hear a thing. Are you mumbling on purpose?

2 MR. SHIRAKH: Well, I'm just wondering
3 if --

4 MR. PENNINGTON: What section are we
5 talking about?

6 PRESIDING MEMBER PFANNENSTIEL: 113 --

7 MR. ROESSLER: Section 113(a)(1). And
8 then there's an exception.

9 PRESIDING MEMBER PFANNENSTIEL: -- the
10 definition of how we are looking at residential.
11 We may need to get back to you --

12 MR. ROESSLER: Okay.

13 PRESIDING MEMBER PFANNENSTIEL: -- on
14 that, thank you.

15 MR. ROESSLER: Second is section 2. It
16 says the pumps for circulating system shall turn
17 on when hot water's not required. My question is
18 how do you know hot water's not required.

19 PRESIDING MEMBER PFANNENSTIEL: Again, I
20 think we'll have to respond --

21 MR. ROESSLER: Okay. And then section
22 5, it talks about --

23 MR. ELEY: When you say section 5, you
24 mean -- small letter --

25 MR. ROESSLER: I'm sorry, it would be

1 113(c)(5). Water heater recirculation loop
2 serving multiple dwelling units, highrise
3 residential and hotel occupancies. I guess
4 there's a whole section there about the specifics
5 of what those circulation systems shall do.

6 My question is what about other
7 commercial buildings using recirculation systems,
8 schools, colleges, office buildings. Are those
9 standards also applicable to those types of
10 construction?

11 MR. SHIRAKH: Yeah, we'd appreciate it
12 if you get your comments in writing so we can
13 actually look and respond to you.

14 I'm looking at your first comment on
15 113(a)(1); it does say chapter 9 of the ASHRAE
16 handbook of HVAC applications.

17 MR. ROESSLER: So is that how ASHRAE
18 defines residential buildings, as opposed to the
19 CEC's definition of residential buildings? That's
20 really the question, because the CEC says that
21 residential buildings are highrise residential,
22 hotel, motels. ASHRAE would define it
23 differently. And that would affect the
24 interpretation of how that would be applied.

25 MR. SHIRAKH: We need to get back, but

1 we'd appreciate it if you'd get these comments --

2 MR. ROESSLER: Okay.

3 MR. SHIRAKH: -- in email or some other
4 form.

5 MR. ROESSLER: Thank you.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you. Are there other comments -- yes, go ahead,
8 Mike.

9 MR. HODGSON: Commissioners, Mike
10 Hodgson representing California Building Industry
11 Association. It's really more of a question, if I
12 may direct it through the Chair, that is in
13 section 112(c) on programmable communicating
14 thermostats.

15 There's a uniform -- the question I have
16 or the building industry has, is the utilities
17 have made quite a lot of discussion over the PCT
18 requirement. And there was a fairly large
19 discussion about a year ago in a workshop over the
20 PCT requirement. And out of that became, I
21 believe, the technical specs that are referenced
22 in appendix JA-5.

23 The building industry has not heard
24 whether or not the utilities have agreed to that,
25 and whether or not we now have a uniform standard

1 the utilities will now be requiring, so that
2 thermostat manufacturers will know what to make.

3 So my question through the Chair would
4 be have the utilities agreed to this standard, and
5 do we now have a product that we can have
6 manufactured and purchased in say the next six to
7 12 months.

8 PRESIDING MEMBER PFANNENSTIEL: I'll put
9 that to Mazi or Bill.

10 MR. SHIRAKH: The requirement for the
11 PCT is statewide. The PCT allows for an expansion
12 port that the utilities could use to enable their
13 own AMI or communication protocols.

14 So the goal of the state standards was
15 to introduce one device that can be purchased
16 anywhere in the state and be used anywhere in the
17 state. And also allow the utilities to run
18 expansion port to enable their own communication
19 devices.

20 It is also possible for utilities to
21 actually go out to bid and make a utility-specific
22 PCT so long as it meets all the requirements in
23 section 112(c).

24 And at this point I'm not clear what
25 that device would be like, but it would still have

1 to meet all the requirements of 112(c).

2 But if they want to do that then they
3 have to pay for that device, not the building. So
4 the builders' obligation is to buy the minimally
5 complying Title 24 PCT. Which the information we
6 have from at least one vendor is that they're
7 going to be selling that to retail outlets for
8 about \$50. And that's the retail cost. I imagine
9 the wholesale cost would be even lower.

10 So that's my understanding currently.

11 PRESIDING MEMBER PFANNENSTIEL: Bill,
12 did you have a comment on that?

13 MR. PENNINGTON: No, I don't.

14 MR. HODGSON: A followup. We've had
15 this discussion with staff, and I presume by the
16 note additional comments from the utilities
17 they're in unanimous agreement with appendix JA-5
18 and we'll have a uniform product in the market.
19 Thank you.

20 MR. SHIRAKH: I think Carlos wants to
21 make a comment.

22 PRESIDING MEMBER PFANNENSTIEL: Yes, I
23 just -- I'd also say that this is a, you know,
24 we're at the point of seeking comments and they
25 don't need to be necessarily here. There will be

1 further opportunity for comment, so.

2 MR. HAIAD: Carlos Haiad, Southern
3 California Edison. As a general statement the
4 utility Edison, and I can't officially speak for
5 PG&E or SDG&E or Sempra, but I believe, in
6 general, we are in agreement with the appendix.
7 And so we are ready for products to be developed
8 and put in the marketplace.

9 In terms of the comments from TURN, I'll
10 be more than happy to work with the state in
11 addressing those comments since most of them were
12 based on a report that we produced. So, seems
13 fair that I will be part of the response.

14 PRESIDING MEMBER PFANNENSTIEL: Great,
15 thank you.

16 MR. HAIAD: All right, thank you.

17 PRESIDING MEMBER PFANNENSTIEL: We have
18 also on section 118, Craig Lease, L&L Suppliers,
19 Incorporated.

20 MR. LEASE: Thank you very much. My
21 comments on 118(c) and on the subdivision (1), or
22 excuse me, subdivision (i) and the table 18A and
23 C, insulation and roofing products was amended to
24 require aged values of solar reflectance as they
25 became available through the Cool Roof Rating

1 Council testing.

2 Specified to reflectance and emittance
3 for products that do not have a CRC certification,
4 added solar reflective index as an alternative to
5 meeting separate thermal emittance and solar
6 reflectance requirements.

7 This is something that is new and I
8 definitely need this as my products were product
9 samples were lost. And of all the 140
10 manufacturers my 18 samples sent back to PRI
11 Asphalt Testing back in Tampa Bay, Florida, are
12 now missing after three and a half years.

13 There is -- my most important samples of
14 all time are gone. I asked Don Portfolio, asked
15 to send me a copy of the shipping receipt that he
16 sent it to Atlas Testing, Scottsdale, Arizona. He
17 went and looked in my file and said there was a
18 handwritten note that he had sent them to Atlas.

19 Consequently I asked him to please fax
20 me that note, and he would not send me that note.
21 I told him I would have email in a couple of days,
22 and that he would email me that note. I am
23 assuming that he was going to scan it and then
24 email it to me.

25 Two days in a row I requested that he do

1 so. I did have email the next day. And still no
2 note. No shipping receipts; no confirmation.

3 I talked with Dan Sprowls of the CRRC
4 explaining my situation that I no longer had the
5 initial test results for my heat shield cap sheet
6 and heat shield tar and gravel.

7 I've been in front of the Commission
8 here about six, seven times, defending myself and
9 my products. And this particular piece of roof is
10 the same piece of roof that I sent to them. This
11 roof is now 44 years old. The central valley of
12 California, without a white roof coating on top,
13 it will last 18 years. And this is still in
14 operation after 44 years. And this is my white
15 cement products.

16 So, I would ask the Commission to please
17 allow me to add the solar reflective index as an
18 alternative to meeting separate thermal and solar
19 reflectance requirements. As I said, I do have
20 the initial requirements, which means he did
21 receive my 18 samples. Nine of the heat shield
22 cap sheet, nine of the heat shield tar and gravel.

23 And Atlas said they never received them;
24 they have no paperwork. And talking to the CRRC I
25 now have four and a half more months out of the

1 six months they've given me to put my samples back
2 in, only to be over three years behind everybody
3 in the country.

4 Also, my testing for white cement
5 coatings, there is the ASTM change, not a change
6 but in the paperwork it says, ASTM 5870 -- excuse
7 me, ASTM 5870, and it should be ASTM 5870-95, in
8 parentheses the year 2003. Standard practices for
9 calculating property retention index of plastics,
10 which is one of the three ASTMs that I'm required
11 to do, which is fine.

12 So I have a copy for you of the initial
13 reflectivities of the heat shield cap sheet and
14 heat shield tar and gravel, which were 85 and 90,
15 83 and 89. Excuse me, 91 and 89 for the tar and
16 gravel. I have a copy of the ASTM document
17 stating the correct number, which you guys are
18 changing; it's double underlined. And I have a
19 copy of the -- from Momentum Technologies, I have
20 a copy of the 42-year-old roof stating that the
21 condition of this roof is exceptional. This tar
22 is the best in California. They don't make tar
23 like this anymore. They don't have tar like that
24 anymore.

25 And I also put in a couple of other

1 things. So I would ask that you please allow the
2 solar reflective index under my particular case.
3 Thank you very much.

4 PRESIDING MEMBER PFANNENSTIEL: Thank
5 you, Mr. Lease.

6 MR. LEASE: Who should take this?

7 PRESIDING MEMBER PFANNENSTIEL: Staff.
8 Mr. Pennington will take that.

9 MR. SPLITT: Pat Splitt from APP-TECH,
10 again. I have a comment on section 118(g) that
11 relates to, I think, heated slab insulation.

12 This section seems to be confusing slab
13 edge insulation requirements for directly heated
14 slabs ongrade, and insulation requirements for
15 indirectly heated exposed grade structural
16 concrete floors.

17 There's a table that lists insulation
18 values just for slab edge insulation, which were
19 for structural slabs that were directly heated by
20 either tubing or air ducts. And somewhere I
21 remember there was discussion on adding
22 requirements for insulation under exposed concrete
23 structural floors, like say over a parking garage
24 or something.

25 And I'm thinking that someone tried to

1 incorporate these together but it didn't work, and
2 the wording now is just gibberish; doesn't mean
3 anything.

4 PRESIDING MEMBER PFANNENSTIEL: Thank
5 you. Any further comments on sections through
6 119? If not, moving to 120 to 126 we do have one
7 comment from Brian Larkin, Tyco Thermal Controls,
8 on section 123.

9 MR. LARKIN: Thank you very much. I'm
10 here representing electrical heat tracing for hot
11 water temperature maintenance. And looking in the
12 table 123A, one of the primary purposes for the
13 basics of electrical heat tracing systems to work
14 for hot water temperature maintenance is to
15 maintain all the piping at the same uniform
16 temperature.

17 The only way to do that is to have
18 uniform heat loss on all the different stems,
19 branches and twig piping.

20 The insulation schedule that is
21 presented in this will not resolve in said uniform
22 heat loss, and actually would not work for the
23 kind of electrical heat tracing systems it's
24 trying to represent.

25 We've been working utilizing European

1 standards such as the German energy commissions
2 where the insulation thickness is equal to the
3 pipe diameter presenting good heat losses through
4 the entire application, as well as uniform heat
5 loss so electrical systems can work.

6 I would like to jus propose that we
7 evaluate the insulation schedules that are
8 utilized with electrical heat tracing so that we
9 can effectively provide good energy savings and
10 systems that actually function.

11 PRESIDING MEMBER PFANNENSTIEL: Thank
12 you, sir.

13 MR. LARKIN: Thank you.

14 PRESIDING MEMBER PFANNENSTIEL: Any
15 other comments on sections 120 to 126?

16 MS. LUCIDO: Hi. With respect to
17 121(c)(3) --

18 PRESIDING MEMBER PFANNENSTIEL: Would
19 you make sure to provide your name for the record,
20 please, and your affiliation.

21 MS. LUCIDO: I wrote my name on a little
22 blue sheet, you mean?

23 PRESIDING MEMBER PFANNENSTIEL: I know,
24 but I think you need to do it --

25 MS. LUCIDO: Oh, for the record, yeah.

1 Danielle Lucido, L-u-c-i-d-o. I'm with Worksafe,
2 one word, Worksafe. It's a California-based,
3 nonprofit organization dedicated to promoting
4 occupational safety and health. We do it through
5 education, training and advocacy.

6 We share the concerns expressed by
7 CalOSHA. Written comments, I believe, submitted
8 to you by CalOSHA regarding 121(c)(3), which
9 mandates the use of demand control ventilation and
10 multizone occupancies with direct digital control
11 to the zone level.

12 We appreciate that the current proposal
13 exempts classrooms from mandated use of DCV; and
14 an exemption for call centers. But we believe
15 these exemptions to be insufficient to protect
16 worker health.

17 We're concerned that CO2 sensors have
18 not been shown to be sufficiently reliable to
19 protect workers, particularly workers in nail
20 salons, social services offices and medical
21 offices, where proper ventilation is particularly
22 important.

23 PRESIDING MEMBER PFANNENSTIEL: Thank
24 you.

25 MR. SHIRAKH: Jackie.

1 PRESIDING MEMBER PFANNENSTIEL: Yes,
2 Mazi.

3 MR. SHIRAKH: We have been in dialogue
4 with CalOSHA and we have actually added those
5 exemptions that you just mentioned. Just we got
6 them too late to put them in the 45-day language.
7 They will be part of the 15-day language with
8 other enhancements, actually. They made other
9 suggestions related to sensor reliability and
10 redundancy. So, you know, we're going to
11 incorporate also those into the 15-day language.
12 And with some possible enhancement to the
13 acceptance requirements.

14 So, we think we've addressed most of
15 their concerns. There's a few issues still
16 remaining related to measuring CO2 at the zone
17 level, which we do not think is feasible at this
18 point.

19 But other than that issue I think we're
20 modifying the 15-day language along the same lines
21 that you just suggested.

22 MS. LUCIDO: Okay, thank you.

23 PRESIDING MEMBER PFANNENSTIEL: Thank
24 you. Other comments on sections 120 to 126? Yes.

25 MR. RAYMER: Yes, Madam Chair and

1 Commissioner. Bob Raymer with CBIA. A question
2 through the Chair.

3 Mazi was mentioning about the 15-day
4 language that would incorporate any changes that
5 come from today's testimony. Could you provide us
6 with a bit of a timeline here? I know that you
7 were looking at a January 30 or 31st adoption.
8 What would be the timeline for 15-day language?

9 PRESIDING MEMBER PFANNENSTIEL: Mazi,
10 would you walk through the expected timeline,
11 please.

12 MR. SHIRAKH: Well, first of all, we'd
13 like to have everybody's written comments in by
14 January 3rd. And, you know, even if you're
15 providing oral testimony today, it's going to be
16 in the transcripts, we like to get them
17 electronically because transcripts will take
18 awhile. And we'd like to get started right away.
19 So if you can give it to us by January 3rd, and
20 preferably before. But it's going to be hard with
21 the holidays and so forth.

22 The adoption date is set for January
23 30th, but that's the adoption date for the 45-day
24 language. And the assumption in there is that if
25 we are not getting substantial comments, and the

1 full Commission wanted to adopt the 45-day
2 language as is, it would have been on January
3 30th.

4 But now it's becoming increasingly
5 evident that we are going to have to modify the
6 45-day language and go to 15-day language. So
7 that pushes the adoption date into February.

8 Unfortunately, the next business meeting
9 in February is only 14 days away from January
10 31st, and 15-day language won't fit in that
11 timeframe. So it appears that the adoption date
12 is going to be February 27, 2008.

13 PRESIDING MEMBER PFANNENSTIEL: Thanks,
14 Mazi. Other comments, 120 to 126. Let's move to
15 130 to 134, specific comments here?

16 MR. NAKAMURA: I had comments on 121.
17 My name's Robert Nakamura with CalOSHA. I'm in
18 the Research and Standards Unit of the Division of
19 Occupational Safety and Health. And the Division
20 has a responsibility for enforcing indoor air
21 quality requirements for all the employees in
22 California. And also for the requirements for
23 employers to maintain, operate and have access to
24 the information about their operation of their
25 HVAC systems.

1 Now, Worksafe mentioned, a letter was
2 submitted to Mr. Pennington, and this was October
3 29th of this year. And I could read it into the
4 record, or I could just simply provide it.

5 PRESIDING MEMBER PFANNENSTIEL: If it --
6 it's been provided to the docket.

7 MR. NAKAMURA: Okay. And I just wanted
8 to amplify a little bit on some of the remarks
9 that were made.

10 Essentially our concerns have been about
11 the control systems, DCV. And especially with the
12 reliability of the CO2 sensors. So basically
13 we've been saying from the earliest stages of the
14 publication that expansion of DCV to the multizone
15 occupancies is not supported by research, and is
16 likely to provide unacceptable health conditions
17 for building occupants.

18 For example, when we noted a study from
19 LBL showing that some installed DCV sensors were
20 not functioning appropriately even within five
21 years of installation. And part of the response
22 to us has been that a method for calibrating the
23 system would be to use exhaled breath as a source
24 of CO2. And, of course, the CO2 that's present in
25 exhaled breath is about 5 percent, which exceeds

1 the 1000 ppm or less limit that's needed to
2 calibrate the CO2 sensor.

3 Also, Mazi noted that we've had some
4 discussions back and forth about some of our
5 concerns, and we appreciate all the work and
6 effort that they've been providing to us. And
7 it's been mentioned that we're concerned about
8 social services and health-related occupancies
9 that have waiting rooms, where the presence of
10 people who have an infectious air-borne disease
11 might pose a contamination risk for others.

12 Also it's been mentioned that nail
13 salons may not have adequate ventilation for the
14 system controlled by DCV.

15 So those are our basic concerns. And we
16 have talked about whether the feasibility of the
17 CO2 sensors is an issue; and that was our last
18 feedback from Mr. Pennington's staff. And what
19 we'd like to see in more detailed form is the
20 basic remark that has been sent back to us is that
21 the CO2 sensors that would be put in each zone
22 controlled by the DCV system would be too
23 expensive in a sense that a sensor and meter for
24 each zone would add to the cost of the total
25 system.

1 And we'd like to see exactly how much
2 that is since we tend to consider the system as a
3 whole in terms of hundreds of thousands of dollars
4 or something on that order; whereas the CO2
5 sensors would be probably a few hundred dollars.

6 So we'd like to go into more detail
7 about that particular aspect of it, and others.
8 So we would appreciate it if we could submit more
9 comments in detail under the timeframe.

10 MR. SHIRAKH: Yes, I would --

11 PRESIDING MEMBER PFANNENSTIEL: Yes,
12 certainly. We'd welcome your comments.

13 MR. NAKAMURA: And I think that pretty
14 much covers it, thank you.

15 PRESIDING MEMBER PFANNENSTIEL: Thank
16 you. Further comments -- yes, go ahead, Gary.

17 MR. FLAMM: Gary Flamm, Energy
18 Commission Staff. I just want to say for the
19 record that I recently received comments on
20 section 119 from the National Electrical
21 Manufacturers Association; and another set of
22 comments from Jim Benya and Kosta Papamichaels on
23 section 119. And staff will be working with these
24 folks to address these written comments.

25 PRESIDING MEMBER PFANNENSTIEL: Further

1 comments up through section 134?

2 MR. SPLITT: Pat Splitt from APP-TECH.
3 I have a comment on section 131(c). This section
4 requires that skylit areas are to be shown on the
5 plans. But it doesn't say what plans and who's
6 supposed to actually do this.

7 And, again, we have a requirement that
8 is too vague and anyone can always assume it's
9 somebody else that's going to do it.

10 So, it seems to me that where they
11 should be drawn is since they're a function of the
12 skylight areas and installations of the skylights
13 in the roof and the windows, these are all
14 determined by the building designer or architect.
15 So that the requirement for these drawings should
16 be on the designer or the architect to require
17 these areas be shown on the plans that they give
18 as backgrounds to whoever's doing the lighting
19 design. That way somebody really will do it;
20 otherwise, no one will do it.

21 PRESIDING MEMBER PFANNENSTIEL: Thank
22 you.

23 MR. SHIRAKH: So, Pat, are you going to
24 give us this in writing?

25 MR. SPLITT: Yeah, I started last night,

1 but I mean it'll be a lot thicker by the time I'm
2 done.

3 MR. SHIRAKH: All right, thanks.

4 PRESIDING MEMBER PFANNENSTIEL: Going up
5 then through section 140-149. I do have comments
6 on section 149(b) from William T. Callahan of the
7 Associated Roofing Contractors, Bay Area Counties.
8 Mr. Callahan.

9 MR. CALLAHAN: Good morning, thank you;
10 I'm sure there'll be others that have similar
11 comments to make.

12 My name is Bill Callahan; I'm Executive
13 Director for Associated Roofing Contractors. I
14 represent union employers throughout northern
15 California.

16 At the outset I'd like to say that what
17 we have in front of us today is much improved over
18 what we saw many months ago. I've had a lot to
19 say about the standards over the last six months.

20 A number of things now simply need
21 clarification and working with staff I understand
22 in the compliance manuals that those concerns will
23 be addressed. The only major issue we have right
24 now has to do with exception number 2 to section
25 149(b)(1)(B)(iv).

1 The intent of this is fine. The idea is
2 to trade off adding insulation against the expense
3 of moving rooftop equipment and conduits, vents,
4 raising curbs and so on. It's a good concept.
5 The problem is that four inches is not the right
6 number.

7 If you go to the National Roofing
8 Contractors roofing manual, our industry standard,
9 it requires base flashings a minimum of eight
10 inches. The Asphalt Roofing Manufacturers
11 Association guidebook, same thing, eight inches.
12 Every material manufacturer specifications I've
13 ever seen are the same thing, eight inches. And
14 that usually is attached to their warranties, as
15 well. If you don't meet that standard they are
16 not going to warrant the roof.

17 That's a major problem for a roofing
18 contractor in a state that has become absolutely
19 infamous for construction defect litigation based
20 on these sorts of differences. If the manual says
21 eight, and you've got seven, you've just bought
22 yourself a new roof on behalf of an owner.

23 That said, I think that we have come a
24 long way. I think that there's a willingness to
25 move this to eight inches, from what I understand.

1 And if that is done we will certainly support it.

2 So, thank you.

3 PRESIDING MEMBER PFANNENSTIEL: Thank
4 you. Mazi.

5 MR. SHIRAKH: Others have brought that
6 to our attention and we have agreed to change that
7 number to eight inches, along with some other
8 clarifications which will go into the 15-day
9 language. We'll present that to you, as well.
10 And I think we have a resolution here.

11 MR. CALLAHAN: Terrific, thank you.

12 PRESIDING MEMBER PFANNENSTIEL: We also
13 have Phil Dregger, Pacific Building Consultants on
14 behalf of ARMA.

15 MR. DREGGER: Thank you. My name's
16 Philip Dregger with Pacific Building Consultants,
17 here this morning on behalf of ARMA, Asphalt
18 Roofing Manufacturers Association.

19 I wanted to concur with comments by Mr.
20 Callahan, thank you. And acknowledge from Mazi
21 that these comments regarding the four-inch
22 minimum for curb height in section
23 149(b)(1)(B)(iv), to be exact. So I don't want to
24 cover that ground over again other than to say
25 that ARMA did submit a letter, which is now

1 posted, in support of the change to make it clear
2 that it's an eight-inch flashing height. So,
3 thank you.

4 I did want to follow up on that with a
5 couple of other comments specifically on that
6 point. Let me back up. Today I want to comment
7 on two specific things. First, which I've already
8 begun, the four-inch flashing height. And then I
9 want to spend a little time talking about the cost
10 effectiveness of the required insulation to be
11 added as part of roof replacement projects also in
12 this section.

13 So, going back to the four-inch height
14 question, which is now eight inches, I wanted to
15 comment on -- this is a little awkward because
16 informally I understand there's some other
17 language being thrown around. And it talks about
18 if a roofing project does not include removal of
19 the rooftop equipment -- and earlier I mentioned
20 that it would probably be best to phrase it if the
21 reroofing project did not include temporarily
22 disconnecting and lifting, as opposed to removal,
23 you know, can be interpreted as removing off the
24 roof, et cetera.

25 Second item, again we're talking about

1 some phrasing. And there's an emphasis in this
2 exception to curb height. And I believe that that
3 also can be inadvertently confusing because the
4 curb height is not necessarily the flashing
5 height.

6 Mechanical equipment often has a side
7 rail, a structural element, a box section that
8 slips over the curb. And if the intent, as I
9 understand it and support that we want to require
10 insulation as long as we don't have the cost
11 prohibitive, you know, requirement to lift, to
12 change-out equipment curbs.

13 If that, indeed, is the intent then we
14 should be talking or phrasing the requirement in
15 terms of effective curb height, or available base
16 flashing height. I believe it just fine-tunes the
17 requirement making it more understandable for
18 those of us who work in that industry.

19 And then final comment about this
20 exception is to recommend adding language that
21 would incorporate wall coverings, lifting
22 equipment, major part -- also major part is if we
23 had to cut a wall covering like stucco, wood
24 siding. I believe along the same line as being a
25 cost prohibitive item, the cutting of the wall

1 coverings can be.

2 So I believe with some language changes
3 there we can preserve the intent and clean it up a
4 little bit.

5 Okay, the second item I wanted to
6 comment on in this, the cost effectiveness of this
7 insulation requirement, and dovetailing with the
8 exception number 1 -- let me back up and just
9 paraphrase.

10 This Roman numeral iv says that when
11 roofs, is part of a replacement, exposes the roof
12 deck or recover boards there's now a requirement
13 to add insulation up to certain levels. And
14 there's a table, 149A, and that up to R8 or R14.

15 And then exception 1 talks about this is
16 not a requirement if the existing roof has R11.
17 And, thank you, in response to a request from
18 ARMA, we were provided with some information that
19 talks about the cost effectiveness of this
20 proposed change.

21 And I specifically want to talk about
22 that for two reasons. In fact, ARMA recommends
23 that the cost effectiveness of this proposal be
24 revisited for two reasons. The first reason the
25 installed costs associated with adding R8 and R14

1 appear low. And the second reason, which I'll go
2 into more, is that the basis of the cost
3 effectiveness analysis appears to be incomplete.

4 And let me explain more what I mean. In
5 information provided to us by staff, and again,
6 thank you, shows the costs associated with adding
7 R8 and R14, and it contrasts that with energy
8 savings of adding the R8 or the R14.

9 Now, the energy savings is presented in
10 two ways. It's presented in an assumption where
11 you don't have any insulation to start with. And
12 a second assumption where you have insulation of
13 R11.

14 And I'm going to try to get through this
15 without getting stuck in some of the details. But
16 let's first talk about the general cost of adding
17 R8 or R14 as part of a roof replacement project.

18 According to the information that we
19 were provided, the analysis is based on looking at
20 the cost to install insulation, which is adjusted
21 for overhead profit in the California adjustment
22 in accordance to standard cost estimating
23 protocol. And then there's also a line for a
24 recover board.

25 And taking these two installed costs,

1 one for the R value and then one for recover
2 board, which can have some R value in it, they
3 came up with totals of \$1.75 for R8 and \$2.19 for
4 R14.

5 And that was broken up, let's talk about
6 the R8, as 71 cents -- let me back this up -- an
7 adjusted cost for the R value of \$1 plus the
8 recover board at 75 cents, to get to \$1.75. And
9 then an adjusted cost for the R14 of \$1.44 to get
10 a total cost of \$2.19.

11 And what we'd like to recommend is to
12 revisit the insulation cost component of \$1 and
13 the \$1.44. We were unable to find those numbers
14 in the cost information that we had available, so
15 we would ask, I guess, for copies of it.

16 And then also to maybe inquire, was this
17 cost information taken from new construction
18 information; or was the cost information taken
19 from repair and remodel costs? Can we pause for a
20 clarification if it's available?

21 PRESIDING MEMBER PFANNENSTIEL: If it's
22 available. Bill or Mazi, do you have the answer?
23 Or, Charles, do you have the answer?

24 MR. ELEY: I believe there were two
25 documents that were forwarded to ARMA. One of

1 them was the analysis for reroofing. There was
2 another report which had the cost estimates. And
3 that was the -- those cost estimates were used for
4 all of the changes to the insulation requirements,
5 not just reroofing.

6 I don't have that particular report in
7 front of me right now, but if memory serves me, I
8 don't remember there being a separate insulation
9 cost for reroofing, either labor or materials.
10 Because the process is pretty much the same.
11 You're putting down a rigid board.

12 The 75 cents for the cover board was a
13 figure that was given to us in, I believe, the
14 June workshop by the roofing industry. So that
15 was added in at your request.

16 MR. DREGGER: Okay. I am not drawing
17 attention to the 75 cent number. I am actually
18 asking for the basic cost of adding insulation of
19 the \$1 and the \$1.45.

20 Again, the information that I had
21 available to me would put numbers like 1.75, 2.50
22 for those kind of numbers, instead of the \$1 and
23 \$1.44. So that's why I would inquire and ask that
24 that be looked at.

25 And I do know, from my own use of the

1 information, that one will get different numbers
2 if you look at the new construction costs versus
3 looking at repair costs.

4 And when you look at repair typically
5 you'll look at the complexity also. And Lee
6 Saylor is a publication that I'm familiar with,
7 has an F1 and an F4, and they range in factors of
8 three between them. And they are related to the
9 complexity and the size of the project.

10 So, it's a recommendation to look at
11 that in a general sense.

12 I want to move on and also recommend
13 that the rationale for the exception of R11 be
14 revisited. And the idea here is that the
15 threshold of cost effectiveness is, I think,
16 relatively obviously it's going to be less than
17 R11. Based on the information that was provided
18 to us.

19 And what I'm referring to, Charles, if I
20 can direct it to you, is these charts, you know,
21 that clearly illustrate the cost savings
22 associated with various assumptions.

23 And there was basically two examples
24 provided to us. The cost effectiveness, if one
25 doesn't have any insulation in the building and

1 were to add it. And then the cost effectiveness
2 if one started with a certain amount of insulation
3 and the one example was R11.

4 And if one doesn't have any insulation
5 at all, the data, again based on the cost that was
6 used to develop so it was cost effectiveness if
7 you don't have any insulation. And the savings
8 are in the terms of \$2.50 to \$3, \$5, very large
9 numbers.

10 But if one assumes that you start with a
11 base insulation, in here the example is 11,
12 instead of talking about \$2, \$3, \$5, we're talking
13 about 35 cents, 50 cents, 60 cent kind of numbers.
14 I mean, you know, greatly less.

15 And so basically, as we understand this,
16 this was shown that if you don't have any
17 insulation it's cost effective. And if you have
18 R11 it's not cost effective. Therefore the
19 exception at R11.

20 But because the R11 example is so much
21 lower than the break-even point, we suggest that
22 additional cases be run, R4, 5, 6, 7, to more
23 closely find where the breakpoint is.

24 The way that the standard reads now,
25 unfortunately, people, building owners insulated

1 to R say 8, based on this information, would be
2 required to add insulation. And it's at least
3 going to be 75 cents, no matter what. And which
4 would actually be counter-productive for them and
5 for the state, as a whole, even considering time-
6 dependent valuation of the information.

7 Any questions at this point?

8 MR. SHIRAKH: We'd appreciate getting
9 all this in writing, again.

10 MR. DREGGER: Certainly, Mazi.

11 PRESIDING MEMBER PFANNENSTIEL: Thank
12 you, Mr. Dregger.

13 MR. DREGGER: Thank you.

14 PRESIDING MEMBER PFANNENSTIEL: Further
15 comments on, now we're moving to section 150-152.
16 Please come up.

17 DR. AKBARI: My name is Hashem Akbari;
18 I'm from Lawrence Berkeley National Lab. The
19 comments that I make are related to section 143
20 and 149. And I will go into each separately.

21 Section 143, which is nonresidential new
22 construction, there are two items for exceptions,
23 item (i)(3) and item (r)(4). Item (i)(3) suggests
24 that either roof is installing building integrated
25 photovoltaic it is exempted from using cool roofs.

1 I would like to bring to the attention
2 of the staff that not all the roof areas are
3 typically covered with the BIPV, and only that
4 portion of the roof that it is covered with BIPV
5 should be subject to this exception.

6 On exception of having a ballasted roof
7 to replace a cool roof, there are -- number one, I
8 have not seen any data, solid data for all 16
9 California climate zones that showing having a
10 ballasted roof would replace the energy
11 performance of the cool roof.

12 And secondly, I would like to mention
13 that in some places, based on some calculations
14 that I have, adding a ballasted roof may actually
15 increase your energy consumption, your cooling
16 energy consumption. Therefore, I would like to
17 suggest that this exemption to be eliminated.

18 And there is always the opportunity to
19 show performance standard through the performance
20 approach if any measure like ballasted measure or
21 high attic ventilation or more insulation in the
22 attic is going to be substituting the cool roof.

23 Going forward to paragraph numeral 2 and
24 3, which is related to nonresidential steep slope
25 roof. First of all, I am very disappointed to see

1 that such a minimum requirement of .20 being
2 selected as the threshold for cool roof. And to
3 me this is not a great day to be here and to make
4 this comment.

5 And while we know that ten years ago
6 EnergyStar EPA picked out .25 to be the minimum
7 level, now we are even going lower than that.
8 Knowing that also there are many products out
9 there in the market which bid this point to zero,
10 the message that we are basically sending to the
11 industry is that, thank you, we don't want your
12 participation anymore, and cool roof is not going
13 to be basically considered whether the roof it is
14 out there, roofing product out there is good for
15 the industry, for California.

16 And I have to mention that I would find
17 this thing very hard to believe, both as a
18 scientist and as a citizen of California, that the
19 cool roof are not effective in California.

20 Having mentioned that, I would like to
21 bring a slight inconsistency in section 2 and
22 section 3. Section 2 requires minimum solar
23 reflectors of .20 for climate zones 2 through 16.
24 And nothing is required for climate zone 1.

25 However, section 3 requires a cool roof,

1 quote-unquote, cool roof of minimum requirement
2 .15 for all climate regions.

3 So just to be consistent it would make
4 sense, even though I do not agree with these
5 numbers, to add to the section 2 a minimum
6 requirement of .15 for climate zone 1.

7 So that is -- these are my comments on
8 section 143. And I would like to -- no, there is
9 another comment that I have on section 143, item
10 3, exceptions.

11 It is again requiring minimum solar
12 reflectance of .55 in climate zones for 10, 11, 13
13 to 15. And knowing that there are a lot of
14 products for low slope roof available that easily
15 beat the market at no incremental cost, at least
16 add a solar reflectance of .25 or .3.

17 I would like to suggest that for all
18 other climate zones a minimum requirement of say
19 about .3 also be selected.

20 Section 149, alteration. The same
21 comments that I make in regard to the new
22 construction for the low slope roof would also
23 apply to items 2 and 3. And I would like to see
24 this section at least to be modified to be
25 consistent.

1 And I would be more than happy to answer
2 any clarifying questions.

3 PRESIDING MEMBER PFANNENSTIEL: Thank
4 you. Are there questions? Commissioner
5 Rosenfeld.

6 ASSOCIATE MEMBER ROSENFELD: Yes, I have
7 a comment. First of all, like you, Hashem, I
8 think that the threshold numbers are pretty
9 disappointing. I'm sort of disappointed with the
10 Cool Roof Rating Council, which I would have
11 thought by now would have had hundreds of examples
12 on its website of higher effective roofing
13 materials so that we could do better cost
14 analysis.

15 And I'm sort of disappointed with the
16 industry for not pushing sales further for hot
17 roofs -- cool roofs. The reason I said hot roofs
18 is that it seems to me that we're not being very
19 consistent with cool roofs in California. We're
20 trying to do everything we can to comply with AB-
21 32 and reduce our CO2 emissions back to 2000
22 levels by 2020.

23 We are looking into appliance standards
24 which will phase out incandescent lamps. And
25 we're not doing anything very much about phasing

1 out hot roofs. And we have to get started and
2 take this more seriously.

3 The good news is that there will be a
4 possibility for doing market transformation
5 through the utility incentive programs. The
6 utilities are planning on doing incentives for
7 beating the present discouragingly low thresholds.

8 I think ten cents a square foot for
9 greater than EnergyStar, .25, reflectance, and
10 maybe 20 cents a square foot for greater than .4.
11 And I'm going to lobby with them for giving even
12 higher incentives for white roofs. I think that
13 in Florida or places where they know it's really
14 hot, Phoenix and Tucson, white roofs are taken
15 almost for granted as the right thing to do. And
16 we're not pushing them in California yet. And we
17 should lobby hard to make sure the utilities do
18 that aggressively.

19 So, I think this is a sort of
20 disappointing first step. We need to do market
21 transformation, we need to tighten these things up
22 greatly by the next phase.

23 And thank you very much for your
24 remarks.

25 PRESIDING MEMBER PFANNENSTIEL: And

1 identify yourself for the record, please.

2 MR. MAEDA: Hashem, you mentioned that -
3 - Bruce Maeda, California Energy Commission Staff.
4 You mentioned that ballasted roofs increase
5 cooling energy consumption. First of all, is that
6 time-dependent valuation, TDV energy consumption
7 for cooling? And also what is the total energy
8 consumption for our analyses?

9 DR. AKBARI: I qualified that
10 calculation by mentioning some limited
11 calculations that I have done has shown that. So
12 it only takes one example to say that this
13 particular exemption is not universally valid.
14 And obviously if one puts the resources one can
15 get a better understanding.

16 And my point is that we already have
17 that posture in place to comply with the standard
18 through performance approach. Why do we have to
19 make exceptions about wishy-washy standard, or
20 wishy-washy measures that we really do not know
21 their impact on all climates and for all
22 conditions.

23 MR. MAEDA: Well, it is important to
24 know whether or not it's time-dependent valuation
25 or not, using raw kilowatt hours I can indeed see

1 a situation where cooling energy could increase,
2 but TDV doesn't increase on the cooling side.

3 MR. ELEY: If I may, Charles Eley,
4 contractor to the CEC. The 25 pounds per square
5 foot was calculated using TDV energy. We took
6 some typical buildings and gradually added mass to
7 the top of the building until we reached equal TDV
8 energy with the required cool roof. And that's
9 the technical basis of the 25 pounds per square
10 foot.

11 And this analysis was done in response
12 to comments that we received from members of the
13 roofing industry to provide some recognition for
14 ballasted roofs.

15 PRESIDING MEMBER PFANNENSTIEL: Thank
16 you.

17 DR. AKBARI: Thank you.

18 PRESIDING MEMBER PFANNENSTIEL: More
19 comments? Please come forward.

20 MR. ENNIS: Hello. My name is Mike
21 Ennis; I'm Technical Director of SPRI, Single Ply
22 Roofing Industry. And I just really wanted to --
23 we certainly support the California Energy
24 Commission's objective to improve the thermal
25 efficiency of buildings. And in particular to use

1 cool roofing strategies to do so.

2 Initially it was highly reflective roofs
3 was the approach that was being used. SPRI and
4 the Department of Energy sponsored a study that
5 was conducted at Oak Ridge National Labs to
6 document the energy saving potential of highly
7 reflective roof systems. And much of that data
8 has been used to develop the numbers and where
9 highly reflective roofs have and produced this
10 thermal efficiency.

11 In a similar manner, SPRI and the
12 Department of Energy also jointly sponsored a stud
13 of ballasted roofing systems. And this study was
14 conducted again at Oak Ridge National
15 Laboratories. And looked at various weights of
16 ballasted roofs. All of that information was
17 provided to the staff, and they have duly noted it
18 and have studied that information.

19 And, as was noted, was a basis. And
20 then additional information was taken. And that's
21 where the ballasted roof exception, and why it is
22 in the California Energy Commission. So it was
23 the roofing industry, as was noted, requested
24 that.

25 And if anybody has any questions on that

1 we would be glad to provide the report; the final
2 report has been issued. There was a presentation
3 given just last week at the building envelopes
4 conference about ballasted roofs and their thermal
5 performance. And we will provide any information
6 to anybody that requests it.

7 Any questions or comments?

8 PRESIDING MEMBER PFANNENSTIEL: Thank
9 you, sir.

10 MR. ENNIS: Okay.

11 ASSOCIATE MEMBER ROSENFELD: Sir, Mr.
12 Ennis, I guess I would like you to say a word or
13 so. Let me assume that the ballasted roof really
14 is a good idea. On the other hand, I guess I'm
15 not quite clear about the logic of why not -- that
16 is, the lighter color the ballast, or if the
17 ballast were a sprayed white or something, the
18 roof would be even cooler.

19 MR. ENNIS: Yeah, --

20 ASSOCIATE MEMBER ROSENFELD: Is there
21 any real reason why you shouldn't do both?

22 MR. ENNIS: Well, those technologies
23 you're talking about have been employed with
24 pavers, concrete pavers. And they have put
25 coatings on concrete pavers, and that was part of

1 the study.

2 And you are correct, that does provide a
3 dual impact. However, ballast, in itself, it's
4 not reflective, but it's a thermal mass effect.
5 It's not the reflectivity of the ballast, --

6 ASSOCIATE MEMBER ROSENFELD: I
7 understand that, but --

8 MR. ENNIS: -- so what we're doing is
9 demonstrating equivalency to a highly reflective
10 roof system and how much ballast, how much thermal
11 mass do you have to add.

12 So, this helps you include systems such
13 as garden roof systems, stone ballasted systems
14 which are very cost effective method for
15 installing roofs.

16 Now, you are correct, if you put a
17 coating on a paver and use that paver you can get
18 a dual benefit. But what the intent of the study
19 was to determine do ballasted roofs, standard
20 ballasted roofs improve the thermal efficiency and
21 reduce the energy consumption of buildings. And
22 they do at a certain ballast weight.

23 ASSOCIATE MEMBER ROSENFELD: I guess I'm
24 going to make my prejudice clear again. Global
25 warming is a serious problem. And you haven't

1 really convinced me that for another 10 cents a
2 square foot or something you can't contribute
3 additionally with your ballasted roof that have
4 them black colored. And I think I'm going to ask
5 if you can get together with the staff and show
6 why it wouldn't be cost effective to have some
7 reflectivity criteria in addition.

8 I agree that ballasted roofs seem to be
9 a good idea, but I repeat, I don't think you
10 answered why we shouldn't do both.

11 MR. ENNIS: So your position, then, sir,
12 is that ballasted roofs should perform above and
13 beyond cool roofs?

14 ASSOCIATE MEMBER ROSENFELD: The call to
15 duty, yes.

16 MR. ENNIS: So they have to meet a
17 higher standard?

18 MR. ENNIS: Yeah, I think everything we
19 can do to delay global warming by another year or
20 so is a good idea. And other countries are going
21 to copy us, and we should be setting an example.

22 MR. ENNIS: Well, yeah, I will be glad
23 to work with staff, and we can certainly generate
24 some of those economies. I don't know why a
25 ballast roof would be held to a higher standard

1 than other materials that are being utilized to --
2 it does, in and of itself, it does reduce global
3 warming potential because it does reduce the
4 energy consumption in a building when you reach a
5 certain mass.

6 So, that, it has demonstrated
7 equivalency to a highly reflective roof system.
8 And I understand, you know, anything we can do to
9 certainly improve beyond that is fine. I just --
10 maybe there's an approach that if you combine the
11 effects, here are some additional savings, maybe
12 it becomes a preferred system because you can go
13 above and beyond the requirements. But, -- would
14 maybe be the approach.

15 ASSOCIATE MEMBER ROSENFELD: You know,
16 there's a pretty big tendency in our society for
17 the automobile manufacturers to say, why do you
18 pick on us; why don't you just make biofuels and
19 we'll solve the problem that way. And the
20 biofuels people say, why do you pick on us, why
21 don't you go for fuel economy.

22 And, we all have to pitch in. Thank
23 you.

24 MR. ENNIS: Yes.

25 MR. SHIRAKH: If I may, I have an

1 explanation.

2 ASSOCIATE MEMBER ROSENFELD: Thanks,
3 Mazi.

4 MR. SHIRAKH: The way --

5 ASSOCIATE MEMBER ROSENFELD: Go ahead.

6 MR. SHIRAKH: The proposal is at 25
7 pounds per square foot it would be equivalent to
8 cool roofs. If they add a coating like you
9 suggested, that would buy them an additional
10 compliance credit. But that budget is not
11 incorporated prescriptive budget that we're
12 talking about.

13 I guess, if I'm hearing you correctly,
14 Art, you want to actually set up an additional
15 credit; you want to put that part of the
16 prescriptive requirements?

17 ASSOCIATE MEMBER ROSENFELD: No, I guess
18 you're making a very good point. If it's widely
19 advertised that you can always get compliance
20 credit for beating the system, maybe utilities
21 will add that to their incentive --

22 MR. SHIRAKH: Well, in the performance
23 approach you can have ballasted roof and cool roof
24 and you'll get the additional credit.

25 ASSOCIATE MEMBER ROSENFELD: All right.

1 So I will leave it as a sermon --

2 (Laughter.)

3 ASSOCIATE MEMBER ROSENFELD: -- and go
4 for compliance credit. Okay, Mazi, you have a
5 good point.

6 PRESIDING MEMBER PFANNENSTIEL: Bruce,
7 quickly on this line.

8 MR. MAEDA: Bruce Maeda. I have one
9 more quick comment. Certain kinds of ballasted
10 roofs like using round rock, coating it may
11 actually be detrimental to the performance of the
12 roof because it bounces more radiant energy deeper
13 into the -- towards the roof.

14 PRESIDING MEMBER PFANNENSTIEL: Thank
15 you. We have another comment in this section.

16 MR. WILCOX: I'd like to say one thing
17 to Art. This is Bruce Wilcox; I'm a consultant to
18 the Commission. I think there's a general problem
19 that I don't think we have any technology for
20 rating the reflectivity of ballasted roofs or
21 roofs with gravel on them that's deemed to be
22 practical.

23 So, the proposal from the ballasted roof
24 industry ignored reflectivity completely. And
25 that was part of the limitations in trying to look

1 at it.

2 And I think that one of the things that,
3 if you really want to push ballasted roofs and
4 tar-and-gravel roofs, all those kinds of things,
5 there needs to be a technology that allows those
6 things to be reliably rated and measured for solar
7 reflectivity. And I don't think we have that.

8 ASSOCIATE MEMBER ROSENFELD: Okay.

9 MR. HITCHCOCK: My name is Reed
10 Hitchcock; I'm the Executive Director of the
11 Asphalt Roofing Manufacturers Association. Thank
12 you for the opportunity to comment.

13 I'd first like to express sincere
14 appreciation to Bill, Mazi, Charles and Pyam
15 (phonetic) really for the cooperative spirit that
16 has gotten us to this point in the revisions to
17 Title 24, part 6. It's been a long process and
18 it's clearly not over yet.

19 Just a few comments in no particular
20 order of importance, just as I wrote them down in
21 response to a couple of issues.

22 Number one, ARMA does appreciate the
23 efforts to develop language, in particular I'm
24 referring to the .20 reflectance that reduces
25 confusion in the marketplace. Earlier drafts of

1 the code included variable reflectance depending
2 on new roof versus re-roof, which climate zone you
3 were in, and what-have-you; making it very
4 difficult, both from a supply perspective, as well
5 as from an enforcement perspective, to comply.

6 We're very pleased that we've been able
7 to work with the Commission to come to language.
8 We, in fact, supported the addition of climate
9 zones that were not previously included in earlier
10 drafts in exchange for some of the reflectance, in
11 order to insure that not only is the state able to
12 meet the energy savings that they require, but
13 that at the same time the consumer is able to get
14 the products that they want to have with the
15 technology that exists currently.

16 We did a survey that we provided to the
17 Energy Commission some time ago where we actually
18 tested the reflectance of shingles that were sold
19 into the California market including the, quote-
20 unquote, reflective granule shingles. I believe
21 the year was 2005.

22 At that time the average shingle surface
23 reflectance for products sold into the market was
24 9.1 percent. We see 20 percent as quite an
25 increase from that point. But we don't consider

1 that we're done there.

2 Our understanding with the Energy
3 Commission is that this is an interim step,
4 probably one of many interim steps to ultimately
5 get to much higher levels once the technology has
6 increased and the costs have come down on those
7 products.

8 At the same time it's our understanding
9 from the Commission that only 2 percent of roofs
10 are following the prescriptive approach. So we're
11 not sure what the ultimate impact will be.

12 With that said, we do support the
13 language as proposed, and appreciate the
14 cooperative spirit in which it was developed.

15 On the steep slope, as a side note, I
16 would like to point out one different -- one
17 inconsistency. Section 118(i)(1) differentiates
18 between asphalt shingles and, quote, all other
19 roofing products. Whereas, elsewhere in the code
20 products are separated in terms of the density of
21 the product. And I don't know if that's -- I'll
22 leave that for you all to consider, but just in
23 terms of consistency.

24 One more point on the steep slope.
25 There is research going on. Dr. Akbari is really

1 helping lead on an initiative for cool roofing
2 materials research. I think that initiative has
3 gone slower than some people expected, as well.
4 Although it's certainly moving in what I would
5 consider the right direction in terms of the
6 ultimate goals of the State of California and the
7 Energy Commission.

8 On low slope I won't reiterate all of
9 Phil Dregger's points or somebody will shoot me.
10 But I do support the comments that Phil Dregger
11 made and encourage the Commission to consider
12 those comments.

13 One other point that I do have related
14 to low slope roofing, however, is the inclusion of
15 the solar reflectance index. ARMA proposed that.
16 We appreciate that. The one thing that we
17 disagree with, in its current form, is that the
18 benefit of the inclusion of SRI is somewhat
19 negated by the penalty that's installed as part of
20 the SRI.

21 And this gets complicated in terms of
22 how I was trying to write it. But, long story
23 short, you've got a requirement for reflectance
24 and emittance in the code. However, when you
25 calculate the SRI, that calculation is based on a

1 higher value for thermal emittance.

2 And so really the products that you
3 would hopefully get into the code that certainly
4 have substantial benefits in terms of energy
5 efficiency and sustainability, that may not meet
6 one or the other of those requirements, but could
7 meet that SRI, were it put into place using the
8 values that are being proposed in the code, you
9 don't get those products because of this quote-
10 unquote, SRI penalty.

11 We're disappointed with that. We think
12 that the SRI values should be calculated on the
13 basis of the thermal emittance and solar
14 reflectance that's being proposed elsewhere in the
15 code.

16 One last point I'd like to make, as an
17 aside, and I don't see it happening in this cycle.
18 But, would like to go on the record. And that's
19 as relates to the Cool Roof Rating Council. It's
20 been our experience and the experience of other
21 industries that I've talked to other roofing
22 product industries, that the Cool Roof Rating
23 Council is probably growing faster than they can
24 keep up with.

25 And we're experiencing problems both in

1 the scope of what the CRRC is doing, and also in
2 terms of their ability to effectively do what they
3 need to do. I would like to just say for the
4 record that we hope in the future that the CEC
5 would consider expanding the supervisory entities
6 to include other capable organizations to rate
7 roofing products.

8 And that's all I have. I appreciate the
9 opportunity to comment. Any questions?

10 PRESIDING MEMBER PFANNENSTIEL: Thank
11 you, we appreciate your comments.

12 MR. LEASE: Craig Lease, L&L Suppliers,
13 a manufacturer of heat shield white cement. This
14 is a ballasted roof. Okay. When you talk 25
15 pounds per square foot, one square is 100 square
16 feet; 100 times 25 pounds is 2500 pounds per ten
17 by ten, one square, 100 square feet.

18 My specifications on this ballasted roof
19 are 170 pounds a square, and 50 pounds of my white
20 cement. As you can see, this is still the 44-
21 year-old roof. That system alone, never being
22 touched, never being washed, never being sprayed,
23 will last 35 years.

24 So if you're looking for a ballasted
25 roof with -- excuse me -- Bill, what was the

1 reflection and emissivity of the heat shield tar-
2 and-gravel?

3 MR. PENNINGTON: What's your question?

4 MR. LEASE: It's on your first sheet.

5 PRESIDING MEMBER PFANNENSTIEL: I'm
6 sorry, you need to stay at the mike if you're
7 going to be --

8 MR. LEASE: I'm sorry.

9 PRESIDING MEMBER PFANNENSTIEL: --
10 recorded.

11 MR. LEASE: Well, I believe it's 81,
12 because it's a rough surface, so there's less
13 reflectivity. And 89 or 91 for emittance.

14 So, 2500 pounds per square, I've never
15 really heard of that kind of weight before. And
16 there is an answer, either a three-ply or four-ply
17 system, 170 pounds, 50 pounds of heat shield,
18 comes out to 7 gallons. Ends up a quarter-inch
19 thick.

20 So, thank you very much.

21 PRESIDING MEMBER PFANNENSTIEL: Thank
22 you.

23 MR. SPLITT: Pat Splitt from APP-TECH,
24 again. I have two comments on this section. One
25 at section 141(j)(1). Has to do with hydronic

1 variable flow systems.

2 There doesn't seem to be an exception
3 for small hydronic radiant heating systems that
4 would just be, say, heating a slab to condition a
5 space. To these -- the exception they give is for
6 a system that has no more than three control
7 valves.

8 I think basically people were thinking
9 about like four-pipe, big commercial systems. But
10 even a small residential radiant system could have
11 50 control valves.

12 So it seems like we need another
13 exception here. Maybe except systems with just
14 fractional horsepower pumps.

15 PRESIDING MEMBER PFANNENSTIEL: Thank
16 you.

17 MR. SPLITT: Okay. And the next comment
18 under this section is section 147. Section 147
19 has to do with outdoor lighting. But even though
20 in places they refer to dimensions that come from
21 plans, they nowhere require that the outdoor
22 lighting zones be provided on plans.

23 Whereas in the sections on the indoor
24 skylighting and side-lighting, the Commission
25 actually has required that someone provide these

1 drawings.

2 It's even more of a problem with outdoor
3 lighting because you have no walls. So if you --
4 I've been trying to design forms for the new
5 standards, and I can come up with a form that has
6 a bunch of numbers on it just like the forms we
7 have now, but for a plan checker or anybody to
8 look at those, it's impossible to know where those
9 numbers came from.

10 And I have a twisted mind so I can
11 actually imagine a way that we could define all
12 this and come up with a system where we actually
13 would define what someone has to put on all the
14 plans defining each area, tying it to some
15 reference on a sheet; defining each pole, each
16 lamp on the pole and how much wattage of each lamp
17 is allocated to each different task.

18 And I could do that, come up with
19 something that would technically work. But if I
20 then step back and say, well, wait a minute, this
21 is so ridiculously complex, I'm not even sure I
22 know what I just did.

23 So, if we are going to do anything with
24 outdoor lighting that requires areas, someone has
25 to be required to actually provide a drawing and

1 submit that drawing, with the plans, that
2 delineates all those areas and has the area --
3 calls out the area and little arrows pointing,
4 this area is this much, this perimeter is this
5 much, these poles are allocated here and there. I
6 think that's the only way to make it work.

7 And if you're not going to do that, I
8 don't think it's worth doing all this. It's
9 getting -- and even if you do do that, it may not
10 be worth doing it because it's getting too
11 complicated.

12 And I'm starting to think that there
13 really should be a simpler way of doing this.

14 And we sort of got our discussion cut
15 off when the 45-day language came up, I'm sure a
16 lot of people have done a lot of work on this, and
17 they're going to throw things at me, but I was
18 just wondering if maybe we couldn't come up with
19 some system where, in fact, you didn't even try to
20 specify the installed wattage. Forget about it.

21 Take lamps that you want to say are
22 disallowed any more, low pressure sodium, mercury
23 vapor, incandescent, those aren't allowed anymore,
24 so you get rid of the worst cases.

25 The assumption made when we're doing all

1 this calculations and we have all these watts per
2 square foot and illumination numbers, is that
3 somebody's actually doing a computerized
4 calculation, and calculating the light levels to
5 show that they meet IES standards.

6 If they're doing that, if they're just
7 being simple and just doing parking lot 1
8 calculation, we get one calculation. If they're
9 doing all these different little areas and saying
10 we need more for this, we need more for that,
11 they're breaking it down.

12 So, they've already got a plan that has
13 all that, and they've calculated the illumination.
14 Most of these programs also you can tell it to
15 give you boundaries. Say anything over a certain
16 illumination, label it this way. Anything below a
17 certain illumination, label it this way.

18 So it seems like if we just came up with
19 a specification basically just shooting for the
20 IES standards, and put a limit on how many
21 measurement points could be above a certain
22 percentage over that limit, and throw out all
23 these lamps that we don't think are efficacious
24 anymore, that would cut the work in half. And
25 most of this work is work designers are already

1 doing. And most of the calculations are
2 calculations that are already done by the
3 software.

4 So, I just think that would be the way
5 to go.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you.

8 MR. SHIRAKH: So I'm wondering if Jim
9 Benya or Gary Flamm want to respond to that.

10 MR. BENYA: Jim Benya, Benya Lighting
11 Design, and consultant to the Commission.

12 We made some -- put some real work into
13 this section this year. You'll recall that it
14 first showed up in the 2005 standards. The 2008
15 standard we realized that the forms, the
16 calculations and everything, had gotten to be very
17 difficult to document and very difficult to show.

18 So a couple things we did. Number one,
19 we did simplify and come up with what we called
20 the layered system. And that is a technique
21 whereby filling in the forms and demonstrating
22 compliance is going to be pretty straightforward.

23 The other thing that I want to flag is
24 that when, some of Pat's comments just a second
25 ago, none of these are very practical. What we

1 are charged with is demonstrating we're going to
2 be saving outdoor lighting energy. The way it
3 works right now is pretty good.

4 The comments about filling in plans or
5 putting the areas on the plans, keep in mind that
6 we simplified it tremendously so that the single
7 largest calculation is hardscape. Hardscape means
8 streets, walks, driveways, et cetera. We got rid
9 of overlapping hardscapes and a lot of other
10 things that were complicated from the 2005
11 standard.

12 I'd have to disagree with Pat. I think
13 that the way it's been rewritten is going to be
14 quite easy and quite repeatable for someone to
15 measure the amount of hardscape, which is the most
16 dominant calculation.

17 And I think at this point, although it
18 should be taken under advisement whether or not
19 there ought to be a standardized format for
20 submitting plans, I do believe that we've made
21 some significant improvements that I'd have to
22 disagree with Pat on on his recommendations.

23 PRESIDING MEMBER PFANNENSTIEL: Thank
24 you. We have one sort of general comments overall
25 on the standards. We have a blue card from

1 Michael Gabel.

2 MR. GABEL: Gabel. Gabel. Thank you,
3 Commissioners, thank you. I'll keep it brief
4 because I'm sure we all want to get to lunch.

5 CABEC supports the general changes in
6 the new standards. We support the effort the
7 Commission has made and the staff has made. We
8 want to thank staff for an awful lot of time that
9 they've put in working with us formally and
10 informally on standards development and on
11 language. And, you know, we appreciate the
12 opportunity to be included in that process.

13 We have some qualifications to that
14 support. And over the weekend I emailed the
15 Commissioners a letter which at some point I'd
16 like you to read; maybe when the dust clears in
17 February or March.

18 We're interested really in
19 implementation, compliance and enforcement. We
20 think that the standards need an extreme makeover
21 at some point, maybe not this round obviously, but
22 we're going to work with staff on the 15-day
23 language to clean up a few nonsubstantive things.

24 However, there is a time between
25 February 27th or '8th, and sometime in the fall

1 when the compliance manuals are going to be ready.
2 We think the compliance manuals do need an extreme
3 makeover. We're not sure that the staff has the
4 time or the resources to do it. We want to focus
5 on what's most in need of fixing or improving in
6 those manuals.

7 We generally concur with some of the
8 comments by CALBO that in the long term we think
9 we need to think of standards somewhat differently
10 to meet AB-32 goals. And, you know, I think, as a
11 confession by CABEC and others, you know, we have
12 failed to get the attention of the Commission all
13 these years. I think to impress upon all of you,
14 and focus more in the next round on
15 implementation, compliance and enforcement issues.

16 We're going to work the best we can with
17 the 2008 standards to make those happen as best as
18 possible. And we're available to do that. And we
19 also would like to see a process where we have
20 some opportunity to work with you talking about
21 long-term planning about changing things. Because
22 we think they're in need of changing.

23 Thanks very much.

24 PRESIDING MEMBER PFANNENSTIEL: Thank
25 you. Thank you for your help and we hope and

1 assume that you will continue to work with us on
2 this.

3 MR. SPLITT: Pat Splitt again. Just
4 want to make one comment about what Mike just
5 said. Art spoke earlier about the need to try to
6 not miss these opportunities to get energy saving.

7 Well, I've been complaining about these
8 same processes since the 45-day language came out
9 in 2005, and basically been ignored. So we've had
10 problems of compliance for three years.

11 Now Mike is sort of suggesting well, we
12 know we still have a lot more problems, but let's
13 wait until 2011 to fix it.

14 If we know we have problems I think it's
15 much better to put off a couple of months and try
16 to fix the problems now, and not wait till 2011.

17 You just recently, in your energy
18 report, determined that the New Solar Homes
19 Partnership program isn't meeting its goals. And
20 I think that the 2005 energy code wasn't meeting
21 its goals, either. I don't think there's been
22 much increase from anything new that was supposed
23 to have been added, and for most of the things in
24 2005.

25 Like I know in my area there's not one

1 building department that requires an acceptance
2 forms. There are no contractors even know what
3 they are. So all this energy savings you think
4 you got from these things is just imaginary.

5 The energy savings we're getting, we do
6 get energy savings, but they're from the
7 efficiencies have gone up, those are federal
8 standards. The fact that people have bought into
9 earlier standards, they're still sort of expecting
10 things to be done the way they were then. And
11 we're still getting those energy savings.

12 But, I think you really have to look at
13 these problems now. And if it takes a couple of
14 months, then take a couple of months now and try
15 to fix these things so we can actually get some
16 implementation and figure out how to have people
17 actually build the building the way you want, not
18 just develop a pile of paperwork to turn in for a
19 building permit.

20 So I have a couple of questions here in
21 general. One thing I want to know is like for
22 compliance manuals and these appendices that are
23 appendices to the part 6 regulations, are they
24 regulations or not. Are the residential and
25 nonres and joint appendices, are they regulations?

1 Are they part of part 6 or are they not? Are they
2 law?

3 MR. PENNINGTON: They are interpretative
4 manuals that are required.

5 MR. SPLITT: The appendices?

6 PRESIDING MEMBER PFANNENSTIEL: They are
7 interpreting --

8 MR. SPLITT: We all know what he means
9 now, right? The answer is solved.

10 (Laughter.)

11 MR. PENNINGTON: They are not
12 regulations. That's obvious.

13 PRESIDING MEMBER PFANNENSTIEL: The
14 standards are the regulations.

15 MR. SPLITT: So the appendices are not
16 the regulations?

17 MR. PENNINGTON: I'm sorry, you said
18 compliance manuals.

19 MR. SPLITT: No, I said appendices.

20 MR. PENNINGTON: So I was responding to
21 your comment about compliance manuals. These
22 appendices are being adopted by regulation.

23 MR. SPLITT: So the appendices are --

24 MR. PENNINGTON: All the documents in
25 front of the Commission today are being adopted by

1 regulation.

2 MR. SPLITT: Okay, so those will be the
3 law?

4 MR. PENNINGTON: You said compliance
5 manuals, we're not considering compliance manuals.

6 MR. SPLITT: Okay, but the compliance
7 manuals then are not the law, they're just
8 recommendations?

9 MR. PENNINGTON: They are -- that's
10 correct. They are providing additional
11 information to clarify the standards, to provide
12 examples, to provide forms, all of the stuff --

13 MR. SPLITT: They're not laws, take it
14 or leave it. I don't have to -- I only have to
15 obey the law. I don't have to obey anything
16 that's in those manuals?

17 MR. PENNINGTON: They are guidance
18 documents.

19 MR. SPLITT: Well, the reason I'm asking
20 is because there's several -- I heard some
21 comments before about people have been assuaged
22 that their concerns about the regulations are
23 going to be handled by you doing something in the
24 manuals.

25 And I just want to make it clear that if

1 someone has a problem with the regulations,
2 anything they do in the manuals isn't going to fix
3 it. That you have to -- you can't assume anything
4 about the manuals because they don't exist yet.

5 And again, I think that the appendices
6 are a good idea. I think the acceptance forms are
7 a terribly bad idea. I think where there are
8 acceptance requirements -- I'm speaking mainly on
9 nonres here, that's what I've been mainly looking
10 at -- if there are requirements that are
11 necessary, they should be put at the
12 responsibility of the installer and certified to
13 in an installation certificate.

14 But that I know the building officials
15 don't want these certificates getting complex, so
16 then the certificate then can refer back to
17 sections in the appendices which are now
18 instructions for the installer and the designer.

19 There's been all this work on somebody
20 coming in after the fact and testing some feature
21 and deciding that it's right or wrong. But
22 there's no effort made by the Commission to
23 instruct the designers on how to design these
24 things correctly, or on the installers on how to
25 install them correctly.

1 And then people get all upset because
2 it's not put in right. Well, there's a reason for
3 that.

4 So, anyway, I think that we've really
5 got to take some time to try to get this done.
6 And, in particular, I don't think you can look at
7 anything that's been proposed here without looking
8 at it in the light of what would be in these
9 manuals. The regulations are calling out
10 specifically details of what you want to have
11 done. But the manual says how it has to be done.

12 PRESIDING MEMBER PFANNENSTIEL: Mr.
13 Splitt, we will be dealing with the manuals after
14 lunch. We have a whole section on the agenda for
15 talking about the manuals.

16 MR. SPLITT: Okay, I'll get back to that
17 then. Let me see here. Are we going to deal with
18 life cycle cost analysis? Or should I do that
19 now?

20 PRESIDING MEMBER PFANNENSTIEL: Well,
21 given the hour, I would suggest that we might want
22 to put other specific questions that will be
23 covered in either the manuals or the appendices
24 till this afternoon.

25 MR. SPLITT: Well, I don't care when I

1 say what I'm going to say. I can do it after
2 lunch, or keep on going, that's fine.

3 PRESIDING MEMBER PFANNENSTIEL: Do we
4 have others, though, who would like to now make
5 comments on the standards that we have just been
6 discussing? Thank you.

7 DR. AKBARI: A short question to the
8 Chair. We skipped section 151, 152, is that
9 intentional?

10 PRESIDING MEMBER PFANNENSTIEL: No, I
11 did not intend to skip any section. This is for
12 any part of the standards you'd like to --

13 DR. AKBARI: Okay, so my comments refer
14 to section 151 and 152. Not repeating my
15 disappointment regarding the level of performance,
16 I would like to bring a slight inconsistency in
17 section 11(a) where the current standards define
18 the minimum prescriptive requirement of .15 for
19 all climate regions.

20 However, for the products less than 5
21 pounds only defines a minimum standard requirement
22 for climate zone 10 to 15.

23 I would recommend extending or adopting
24 a minimum requirement for the other climate
25 regions for the products less than 5 pounds per

1 square foot.

2 On section 11(b) the same comment is
3 applied. A minimum requirement for low slope
4 roofs in residential buildings are recommended for
5 climate zones 13 and 15. To be consistent with
6 the other sections, we perhaps would like to
7 extend that to the other regions, as well.

8 And I guess that's my comment on these
9 sections. Thank you.

10 PRESIDING MEMBER PFANNENSTIEL: Thank
11 you. Another? Yes.

12 MR. CHAPMAN: I am Jeff Chapman with
13 California Living and Energy. A quick item,
14 really, Mazi and Bill, it's a point of dialogue
15 for us, not so much for a discussion on it right
16 now.

17 In your comments in the manual dealing
18 with building departments we respect our esteemed
19 colleagues from Fairfield and was it Vacaville?
20 We appreciate what they're doing.

21 We provide Title 24 calculations and
22 HERS ratings throughout the state. One of our
23 biggest issues consistently are homeowners moving
24 in without our raters being in the homes testing.
25 Because the house is final and no CF4R has been

1 issued because no testing was done. Nothing was
2 requested.

3 In 2000 and in 2005 I know from Mike's
4 office and from our office we provided a lot of
5 education for building departments. We heard the
6 constraints of time from those two building
7 officials. Possibly in your agenda we can
8 dialogue about this. There should be some
9 training from people that can be certified like I
10 have been, and people from Mike's staff have been,
11 to train building departments and make them sign
12 up they've been trained.

13 And then secondly, what will you do, and
14 I mean that you second person, plural, what will
15 happen to building departments who do not comply
16 with the standards. And that's meant for
17 something we can dialogue about or email about.

18 Thank you much.

19 PRESIDING MEMBER PFANNENSTIEL: Thank
20 you. Further general comments overall on the
21 standards, the 45-day language?

22 As the agenda shows, we will come back
23 after lunch and specifically take up the
24 appendices and the compliance manuals.

25 So, with that, I think we should be back

1 here let's say in an hour, so 1:30.

2 (Whereupon, at 12:21 p.m., the hearing
3 was adjourned, to reconvene at 1:30
4 p.m., this same day.)

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AFTERNOON SESSION

1:34 p.m.

PRESIDING MEMBER PFANNENSTIEL: We're going to start this afternoon talking about the appendices and appendices changes. We're going to ask Charles Eley to walk us through a summary of what's in the joint appendices. Charles.

MR. ELEY: Okay, thank you, Commissioner. All right. In 2005 we created the concept of joint appendices. And at that time there were four of them, the first four that you see listed here.

And the first one is simply a glossary of terms that previously was scattered around in multiple places within the standards. It's now been consolidated to one place.

The only changes that have been made to the glossary are related to new concepts and measures that have been added to the standards like PCTs is now defined and terms like that.

The second joint appendix 2 is a consolidation of the climate data for California. And this consists both of a description of the 16 climate zones, but it also includes several hundred sites that are used for sizing equipment.

1 And there's design data that's included there.

2 The only significant change to JA-2 is
3 some language that permits the Energy Commission
4 to modify the 16 reference climate weather files
5 to adjust them to meet the -- adjust them for the
6 individual cities within California. That hasn't
7 been done yet, but there's a procedure in there
8 that enables that to happen.

9 JA-3 is the time-dependent valuation
10 data. This was updated with this round. It's
11 been available for at least 18 months now. And
12 it's been used as a part of the lifecycle cost
13 analysis.

14 JA-4 was also created in 2005. As Mazi
15 mentioned in his summary this morning, there have
16 been a number of modifications to this. There's
17 one new table that was added for steel framed
18 walls in residential applications. And apart from
19 that there were some various other changes and
20 modifications that were made to this.

21 All of the criteria for U factors and
22 thermal performance in the standards, in the ACMS,
23 all reference joint appendix 4.

24 The other, JA-5, -6, -7 and -8 are all
25 new. JA-5 is the reference design for

1 programmable communicating thermostats. JA-6 is
2 specification for charge indicator lights, which
3 is now an option for refrigerant charge, for
4 verifying refrigerant charge and mostly
5 residential-scale equipment.

6 The TXV, thermal expansion valve,
7 alternate was dropped and it's been replaced with
8 this charge indicator light. So that appendix
9 specifies what you need to do to take credit for
10 that.

11 JA-7 is a procedure for verifying
12 installation quality in spray foam insulation.
13 And JA-8 is a testing protocol for LED lighting
14 systems.

15 Next slide, Chris. Okay. And then we
16 have a series of residential appendices. Most of
17 these actually are not new, but rather they've
18 just been moved here from what was in '05 the
19 residential ACM manual.

20 The sizing, RA-1, is on sizing; RA-2 is
21 what used to be chapter 7 of the residential ACM
22 manual. RA-3 is a consolidation of a number of
23 appendices all of which deal with field
24 verification and diagnostic testing procedures.
25 These deal with verification of insulation

1 quality, refrigerant charge, air flow, duct
2 sealing and so forth.

3 RA-4 is not new, either. It's a
4 reorganization. In the 2005 ACM manual there were
5 a lot of measures there that -- and each measure
6 had a set of eligibility criteria attached to it.
7 So you had to meet those eligibility criteria in
8 order to take credit for that measure. Those
9 eligibility criteria have now been moved out of
10 the ACM manual and consolidated in RA-4.

11 And then RA-5 is also relocated from the
12 residential ACM manual. This is used for
13 determining the interior mass capacity which
14 qualifies a residence as a high mass building.
15 And when it qualifies as a high mass building, it
16 can be modeled as such. And there's some credit
17 involved.

18 Next slide. Then the nonresidential
19 appendices, there's eight of those. These are
20 largely material that's been moved either from the
21 standard or from the residential -- excuse me, the
22 nonresidential ACM manuals.

23 NA-1 used to be chapter 7 of the nonres
24 ACM manual. NA-2, I don't remember which appendix
25 that was, but that deals with duct sealing in

1 packaged equipment.

2 NA-3 is data on fan motor efficiency.
3 NA-4 are the compliance procedures for relocatable
4 public school buildings. And this deals with the
5 Division of the State Architect's precheck and
6 final check for that process.

7 NA-5 is the revised building envelope
8 tradeoff procedure. This used to be contained in
9 section 143(b) of the standard. But it's been
10 moved to NA-5 so that because we felt that's a
11 better home for it, since there's a lot of
12 equations and a lot of fairly detailed data. So
13 section 143(b) now just makes reference to the
14 calculation procedures in NA-5.

15 NA-6 was also used to be a part of the
16 nonresidential ACM manual. And this has
17 fenestration, default fenestration thermal
18 properties, SHGCs and U factors for site-built
19 fenestration and for skylights. All other
20 fenestration would either need to use the defaults
21 in the standard, or they would need to use NFRC
22 data.

23 NA-7 is the new home for the acceptance
24 requirements. These previously were also a part
25 of the ACM manual. And there have been a few

1 things that have been added to that. There was a
2 new set of requirements for fenestration and a few
3 other things I think were mentioned earlier this
4 morning.

5 And then NA-8 used to be a part of the
6 nonres ACM manuals. Well, this has information
7 that's needed for the tailored lighting method; it
8 has data from the IES handbook. And it also has
9 default luminaire power levels for common lamp and
10 ballast combinations.

11 So that's a summary of the -- this is
12 quite a large document. It's mostly just
13 reference material for the most part. And most of
14 it existed in the 2005 standards. And now it's
15 been relocated into the standards appendices.

16 And as Mazi noted this morning, the
17 primary motivation for this is so that the ACM
18 manuals, the residential and nonresidential ACM
19 manuals, can go back to their central purpose,
20 which is to be a specification for compliance
21 software.

22 PRESIDING MEMBER PFANNENSTIEL: Thanks,
23 Charles. I do have one card from somebody who'd
24 like to speak to appendix JA-7. Jim Francisco,
25 NCFT.

1 MR. FRANCISCO: I'd like to thank the
2 Commission for allowing us to speak here today,
3 and for the work that we've put in on this for the
4 last two years.

5 We have one concern with this and it
6 comes to JA-7.9. It speaks to the value in the U
7 value specifications. The first line reads: For
8 median density foam all the total R values shall
9 be calculated based on the normal thickness of the
10 insulation times an R value of 5.8."

11 That is an arbitrary number. It has
12 nothing to do with foam. This number was got from
13 the Bureau of Home Furnishings. And they're going
14 to revise their numbers in January, so the
15 number's going to be outdated.

16 What the Commission needs to know about
17 the foam is that foam calculation are by each
18 manufacturer. Depends on the blowing agent that's
19 used in it; depends on the formulation that's
20 used. So they will usually rate somewhere between
21 6.2 and 7.1. There is no foam in the market that
22 has an R value of 5.8. Not one.

23 MR. SHIRAKH: Could you repeat that
24 range, again?

25 MR. FRANCISCO: Range of 6.2 to 7.1.

1 What this does is it -- you, in your appendices
2 here, have also stated that before you came down
3 to a 5.8. If you go back and you look in section
4 JA-7.2, it states in there that SPF may be a two
5 component reactive system, and SPF can be
6 formulated to have specific physical properties
7 such as density, compressive strength, closed cell
8 content and R value. They will vary.

9 I mean you recognize it in the first of
10 it, and then you set an arbitrary number of 5.8.
11 What we would like to do is supply the Commission
12 with the lab tests that shows throughout the
13 industry from all of foam manufacturers the HR
14 values of the materials. Because we feel, to
15 produce a even playing field for this, we have to
16 have a true value of the foam listed.

17 And as I said, you already show that
18 there is a value difference, in your own wording.
19 We need to be able to give you the information
20 that will allow you to understand what we're
21 trying to put across to you.

22 So, I would like to -- we're preparing
23 to submit a written report with all the certified
24 lab testings on it to the Commission. We ask you
25 to look at it, and to take note of the meeting of

1 the Home Furnishing people on the 14th of January
2 when they will change their -- most likely change
3 their values and yours will become outdated all
4 over again.

5 PRESIDING MEMBER PFANNENSTIEL: Thank
6 you, sir.

7 MR. FRANCISCO: Okay.

8 PRESIDING MEMBER PFANNENSTIEL: We'll
9 look at your material.

10 Further comments or questions on the
11 appendices? Please come up to the microphone and
12 state your name.

13 MR. ORCH: Lyle Orch with Cool Roof
14 Systems. I'm a contractor in southern California
15 specializing in spray foam applications.

16 I have the same concern that Mr.
17 Francisco mentioned in regards to the
18 predetermined value of the closed cell insulation
19 or spray foam insulation. But I also wanted to
20 bring up that we spent many months on this, in
21 particular in the rough drafts on developing JA-7,
22 specifically for medium density foam.

23 Since we completed this back in about
24 June or July, now the low density foam has been
25 added to it. We haven't had any comment on this

1 or anything. As a matter of fact, this is the
2 first I've seen the document on Friday when I got
3 it off of the internet.

4 So, we've taken two totally different
5 products, taken a guide designed specifically for
6 one type of product and put both products into a
7 single document.

8 And there's a number of problems within
9 the document if you start going back into the
10 application requirements. In particular where it
11 gets into the low density application, there's a
12 number of areas where it calls for an R-13 for
13 two-by-four framing, and R-19 for two-by-six
14 framing, which is fine and dandy because most low
15 density foam manufacturers, that's where they're
16 going to be into.

17 But it doesn't address the application
18 in the ceilings where you have an R-30
19 requirement. There's a number of the low density
20 manufacturers have approvals with the state for R-
21 30 and R-38 applications. And those are
22 applications that we do currently. We're going to
23 continue to do those applications, but they're not
24 addressed properly in this document.

25 So, if we're going to combine the two

1 types of insulation materials then we need to
2 revise this document one more time to be a little
3 bit more specific about the application.

4 Because the inspector and the
5 applicators that are going to be using this, the
6 applicators know the difference. The inspectors
7 typically don't. You know, is it soft foam, is it
8 hard foam.

9 I deal a lot with the inspectors on a
10 building -- or on a daily basis. And they just
11 don't have -- this was a document we felt we could
12 work with, they could understand it. Even the
13 contractors and the applicators could understand
14 it. And then it got changed before it actually
15 comes to publication.

16 Thank you.

17 PRESIDING MEMBER PFANNENSTIEL: Thank
18 you. Others? Mike Hodgson.

19 MR. HODGSON: Thank you, Madam Chair and
20 Commissioners, staff. I'd like to reiterate the
21 comment about JA-7. The industry has received
22 quite a few comments just in the last few days
23 about medium and low density spray foams. The
24 medium guys not knowing low density's there. Low
25 density's wondering why the medium guys are there.

1 So, I think you should anticipate a few
2 more questions coming in and some clarifications,
3 which I think is good. I mean we need to have a
4 document out there because we do have QII for
5 regular insulation. And there's some editorial
6 comments we've already given staff about that.

7 But I would like to talk about four
8 areas of the appendices very quickly. Some of
9 it's information and others is requests.

10 The first is appendix JA-4 on insulated
11 doors. We discussed this with staff last week.
12 And our understanding is that there's going to be
13 a table that's been put into the compliance
14 software that will reference doors. The issue is,
15 as previously, and actually currently, the market
16 uses NFRC ratings for insulated doors. And we put
17 that in our compliance documentation.

18 There is a section in the code, if we're
19 paying attention, which I apologize for not paying
20 attention for the last two and a half years, in
21 which you have to default to a .5 value for doors.
22 And that's just really penalizing people who are
23 using insulated doors.

24 It made sense at the time, discussing
25 with staff when you look it up and it could be in

1 the NFRC table, but then we started going to some
2 manufacturers and we found out that some of them
3 had 12 to 15 doors that are registered with NFRC
4 with a insulated or verified U value.

5 Assuming that there is 40 to 60 window
6 manufacturers out there, and many of them have
7 door product lines, I'm not quite sure if it's
8 really practical to have all of that as a default
9 within, you know, a compliance software.

10 So it may be like we do with windows,
11 unless the intent is also to do windows this way,
12 is we used the manufacturer's technical
13 information included in our compliance
14 documentation. And then move that to the building
15 department so it can be plan checked.

16 So that's the first issue. I'm not sure
17 what the intent of staff is, but I think it's just
18 kind of an information issue and we can deal with
19 it.

20 The second issue is kind of related to
21 mechanical sizing. We have multiple topics here
22 in which really I think the ultimate goal is to
23 reduce peak load and reduce air conditioning load.

24 To do that we need to make sure that we
25 size the system properly; we charge the system

1 properly; and we verify that there's adequate air
2 flow. And two out of three of those exist in the
3 market. And the third used to exist as a thermal
4 static expansion valve, or what we call a TXV.
5 And now we're trying to make it a refrigerant
6 charge verification.

7 And we can do that a couple ways. The
8 staff has recommended either we go out and test
9 the system, after the subcontractor charges the
10 system. And the industry, as HERS raters,
11 typically are not certified to do that. And if
12 they do, many of our HVAC subcontractors say, you
13 test it, you own it.

14 That's a warranty issue, and it's an
15 issue that really there's a very distinct line
16 between the HERS inspectors and the
17 subcontractors. So we don't think that's very
18 workable. But those who are competent to do it
19 should be encouraged to do it and get a credit.

20 The other path in which you can get
21 credit is using a charge indicator light, which we
22 think is a very interesting device. Unfortunately
23 it's not on the market today. And so what we
24 would like to do is disassociate, and we discussed
25 this with staff just recently, we want to

1 encourage maximum cooling capacity and encourage
2 the refrigerant charge/charge indicator light.
3 But we want them to be disassociated so that if
4 you do a good design, and you're required to do
5 adequate air flow, you still get credit.

6 But in addition, there's a market pull
7 for these other devices to make sure the system's
8 working well.

9 So we propose that to staff. They
10 acknowledge the discussion. We'll continue that
11 discussion and hopefully come to a mutual
12 conclusion.

13 And that was all over in different
14 sections and I'm not going to reference them.
15 There's four sections referenced.

16 The next section is in compliance
17 documentation, which is an RA-2, section RA-2.3,
18 2.4 and 2.6. This section requires compliance
19 documentation and describes how sample groups are
20 done for a HERS rater.

21 So what we would think of today is
22 sample groups, we're required to test one of each
23 type of home in one-in-seven type of arrangement,
24 or not any less than 15 percent.

25 Two years ago when our market rate was

1 somewhere between six and eight homes closed per
2 month per subdivision, this was a very workable
3 way to do testing.

4 However, with the current market rate of
5 one or two homes closed per month per subdivision,
6 what this requires is we cannot complete our
7 compliance documentation until we have all CF-6 R
8 forms completed by that group of one in seven.

9 Well, that could be the building would
10 be waiting somewhere between four and six months
11 before they get a CF-4 R. Theoretically they
12 don't close the home before they have the CF-4 R
13 form. And we'll talk about enforcement as a
14 separate issue later.

15 But we think there is a way in the
16 compliance documentation to either not have to
17 close the group until you've completed one in
18 seven, or until that six-month period of time has
19 occurred.

20 But the way it's written today we need
21 better language, because it's unworkable. And
22 what it will require us to do is to test basically
23 every home out there in the field because the
24 phases are so small today, they're either at one
25 house or two houses per subdivision; we're going

1 to be out there at every one or two houses. And
2 we think that's an increased burden on the
3 industry and on the HERS rater. So we would like
4 to work with staff and propose language.

5 The last issue is a point of
6 clarification, and is something I couldn't find.
7 I couldn't read all the documentations over the
8 weekend. But we were talking about, a few weeks
9 ago, with staff about a glitch in water heating
10 for attached for sale products where they have
11 central furnaces.

12 And the issue is if you use attached for
13 sale products and require a third-party
14 inspection, the HERS providers require us to
15 submit as model by model instead of building by
16 building.

17 When you have a boiler that boiler's for
18 the building for water heating. So how do you
19 divide the water heating credit by model or by
20 unit? There was a resolution to that, and I think
21 half the people in this room responded to the
22 email trail. And thank you very much for that
23 rapid response.

24 But I couldn't find it. Charles has it
25 hidden somewhere in a residential appendix, and I

1 know it's there, I just couldn't find it. So I
2 thought it was in the residential ACM. Maybe it's
3 in the ACM and not the appendix.

4 But I would just like to make sure that
5 that clarification is there and we can see it
6 before it's approved.

7 Thank you.

8 PRESIDING MEMBER PFANNENSTIEL: Thank
9 you, Mike. Other comments on the appendices, or
10 questions? Great.

11 MR. SPLITT: -- had the same question.

12 PRESIDING MEMBER PFANNENSTIEL: I'm
13 sorry, for the appendices?

14 MR. SPLITT: (inaudible). Pat Splitt
15 from APP-TECH, again. Just get to the right spot
16 here.

17 Okay, in the appendices there are very
18 many spots where there are instructions for either
19 plan checkers or field inspectors from the
20 building departments. And as I mentioned in the
21 morning, if you want these to be enforced they're
22 worthless where you have them now.

23 They have to be put under part 1 in a
24 specific section for building department
25 requirements. If you don't put them there you

1 might as well just not have them because it
2 doesn't mean anything to them to be anywhere else.
3 And there's a lot of them.

4 And I suspect that these haven't been
5 vetted with CALBO, because I can't see that they'd
6 go for having all of those very picayune
7 requirements put into the administrative code.
8 But if you do think they're needed that's where
9 they have to be, in part 1.

10 There's a section there for nonres that
11 requires home energy raters to do verification of
12 some duct requirements. Well, what makes a home
13 energy rater qualified to work on commercial HVAC
14 equipment? I don't think there's anything that
15 does that. And some of them may know how to do
16 this, but some don't. I don't think there's any
17 standard.

18 And it doesn't make sense on a
19 commercial building when you already have
20 certified air balancers out there that are paid
21 and are on the job, and they're measuring air
22 flows. Why not, if you need to have some more
23 requirements, just add those requirements to the
24 requirements of a certified air balancer, who is a
25 licensed professional, and is very familiar with

1 commercial products, and have them do the work
2 instead of bringing in another person on top of
3 this. It just doesn't make any sense.

4 MR. PENNINGTON: So, just a comment.
5 This is the same requirement that we've had in
6 2005. It's basically rooftop equipment that's
7 being tested, duct systems very similar. These
8 are single zone systems, very similar to
9 residential.

10 Knowing how to do that pressurization
11 and duct testing for one application is quite
12 transferrable to doing it for the other. And
13 that's the way it was done in 2005 --

14 MR. SPLITT: But nobody does that.

15 MR. PENNINGTON: So that's a different
16 comment. But in terms of why is that person not
17 skilled to do it, it's essentially what they do
18 for residential. So I don't want to debate it
19 with you, I just wanted to point that out.

20 MR. SPLITT: Well, it just doesn't make
21 sense. If we already have somebody out there
22 that's a professional that knows all this
23 equipment, and you don't have to dumb the
24 requirement down to just certain simple equipment
25 that's similar to residential. An air balancer is

1 familiar with all that equipment.

2 You're taking a lot of systems out of
3 this check that could be checked by someone who
4 knew what he was doing. It just seems like you're
5 dumbing it down just so you can make it fit into
6 something that a HERS tester might be able to do.
7 So it just doesn't make sense. But, leave it.

8 There's some alternatives, and I
9 couldn't quite figure out for HERS alternative and
10 NSHP waivers where the building departments can
11 decide to waive the responsibilities and let the
12 HERS checker take responsibility for compliance
13 with the building code for energy? I wasn't clear
14 what that was. But it just didn't seem like it
15 was legal. I don't think you can absolve the
16 building official of their responsibilities. That
17 somehow they have to, they're always responsible.

18 So I think there has to be something
19 there to clarify what exactly you mean, because I
20 couldn't figure it out.

21 And, again, I just think that in the
22 nonres appendices for acceptance procedures it
23 would be much better to have the installer do all
24 these. And we're looking at the same method on
25 residential work. There's an installer comes out;

1 he knows there's an installation certificate he
2 has to fill out. Many times it's the same people
3 that go out on a commercial job. Why not have the
4 same procedure when they go on a commercial job?
5 There's an installation certificate he has to fill
6 out.

7 This could actually be handled fairly
8 easily, for the most part, by just changing the
9 requirements in the acceptance procedures, where
10 now you basically allow anybody under the sun who,
11 you know, has some sort of license. If you just
12 change that to just require that that be by the
13 licensed installing contractor, you can leave most
14 of the other stuff alone.

15 And then just when you make your
16 compliance form, just make it an installation/
17 acceptance certificate. So it doesn't mean like
18 rewriting all the acceptance procedures. It just
19 makes someone responsible who actually might then
20 actually learn something if he could read the
21 stuff and learn how he was supposed to be doing
22 this all these years.

23 MR. SHIRAKH: Does this take care of
24 your earlier comments about acceptance
25 requirements not being -- sorry -- acceptance

1 requirements and installation certificates being
2 two different documents and --

3 MR. SPLITT: Yeah. It would. I mean my
4 main goal is to have the installer responsible and
5 have the Commission actually tell the installer
6 what he has to do. Because now that doesn't
7 happen. He's just guilty, and you know, somebody
8 actually did the testing.

9 So if you just made that first little
10 paragraph where you delineate who can fill out
11 these acceptance forms, if you just say, well,
12 this acceptance procedure has to be done by the
13 installing contractor, licensed installing
14 contractor. And then we can have one form, and we
15 just change the title. Instead of installation
16 certificates, installation/acceptance certificate,
17 but it sort of comes up the same time.

18 I think it would be a lot better. And
19 then to tie the two together I think you can't
20 have -- we did the residential forms, we redid
21 those. And the installation certificates start
22 getting longer and longer and longer.

23 And I think a goal should be to not make
24 them longer and longer and longer, to simplify the
25 compliance statements on the certificate, and just

1 refer back then to the correct appendix.

2 And make, you know, since it's been
3 clarified that that is now part of the law, then
4 it's just like a building code. A plumber goes
5 out and gets plans for a building. You don't have
6 the whole plumbing code listed in the plans. It
7 just refers to certain sections. And he signs off
8 and says I'm going to build this to the code.

9 So, seems like it would close the
10 loophole. Because when you have all these
11 different people, everybody's going to assume that
12 somebody else is doing it, and it won't get done.

13 MR. SHIRAKH: So these recommendations
14 you're making related to acceptance requirement
15 and installation certificate. Are these mostly
16 related to forms and compliance manuals, or do we
17 need to actually change the language in the --

18 MR. SPLITT: Well, you'd have -- right
19 now I'm saying the only language you'd have to
20 change is change who's responsible in the
21 acceptance procedures.

22 But then once you say it's like an
23 installing mechanical contractor, you might have
24 to go through there and see if there's some
25 problem, if there's something that they won't do.

1 But I don't know what they wouldn't want to do.

2 Because if somebody's going to be coming
3 -- if the contractor is responsible, if he knows
4 somebody's coming in afterwards and they're going
5 to, you know, test the ducts or whatever, the only
6 competent thing he can do is he has to do all that
7 stuff anyway.

8 But that's only the competent guys.
9 Most of the installers won't have any idea about
10 this. And they'll be off the job and gone before
11 the acceptance person shows up.

12 So what happens when the acceptance guys
13 says, well, it doesn't work? You know, i can be a
14 lot better just tie them together and have the res
15 and nonres similar; have installation
16 certificates; and we can have the nonres
17 installation/acceptance certificate basically
18 refer to these same procedures. It's just now
19 limited to the installing contractor is
20 responsible.

21 MR. SHIRAKH: Again, we look forward to
22 getting your written comments on these.

23 MR. SPLITT: Okay, that's it.

24 PRESIDING MEMBER PFANNENSTIEL: Thank
25 you, Mr. Splitt.

1 MR. BACHAND: I'm Mike Bachand from
2 CalCERTS, a HERS provider. Chairperson
3 Pfannenstiel, Commissioners and Staff, thank you
4 for this opportunity to talk.

5 I just wanted to reiterate on the
6 concerns of Mike Hodgson from ConSol had about the
7 smallest of the groups based on the building pace
8 these days. And closing out groups.

9 I have been involved in a dialogue with
10 the Energy Commission on this issue. And I would
11 like to continue that dialogue. And so if that
12 dialogue continues I would like the HERS providers
13 to be involved with that.

14 But I'd also like to say that it's a
15 difficult situation, no doubt. However, if we are
16 going to live and die by sampling, then we can't
17 destroy the sampling process by giving out houses
18 without a test being done on one of the group.
19 And then realizing at the end of the group, oh,
20 this one's going to be the one that's tested.

21 These licensed professionals that do
22 this work intend to do good work, but we
23 continually measure systems that are supposed to
24 be built tight, but leak 20 and 30 percent.
25 Things are left off; things happen.

1 And so I think it's a bit naive to just
2 blythly say, well, you know, that doesn't work.
3 We have to let these houses go. I think we need
4 to dialogue some more on that and come to a
5 consensus where the job gets done, inspected
6 randomly and properly.

7 And I didn't intend to answer Patrick
8 Splitt, but he spoke before me, so I would like to
9 tell him, we have a one-day training program
10 that's required for HERS raters to do commercial
11 HERS ratings. And we feel that that training is
12 comprehensive and gets the job done for the intent
13 of the rules and standards that they're supposed
14 to do. So if you'd like to come and attend that,
15 we'd give him a free ticket.

16 (Laughter.)

17 PRESIDING MEMBER PFANNENSTIEL: Thank
18 you.

19 MR. BACHAND: Thank you for your time.

20 MA. JONES: Hi. My name's Anne Marie
21 Jones and I work with enalasis, which is a third-
22 party quality control program. I want to thank
23 you for your time.

24 Enalasis was the first approved and is
25 the most active third-party quality control

1 program operating under Title 24. We now serve
2 over 500 HVAC contractors in the State of
3 California and have received over 14,000
4 registered Title 24 jobs in the program's
5 registry.

6 In addition, enalasy is leading in the
7 state's initiative to reduce kWh and kW by
8 participating in the PG&E, Southern California
9 Edison and SDG&E HVAC verification programs.

10 We've received and verified more than
11 120,000 energy measures resulting in a reduction
12 of 30 megawatts of power for this year alone.
13 These programs and initiatives are having a great
14 economic impact by further reducing the inspection
15 costs to the homeowner, the builder, the
16 contractor and the building departments.

17 However, there's still a lot of work to
18 be done on a mass scale. And as such, the
19 Commission can help by furthering the widespread
20 adoption of this very important Title 24 program
21 by clarifying the language in paragraph 7.7 of the
22 Title 24 ACM manual.

23 The language, as is, has been confusing
24 for building departments since the induction of
25 the third-party quality control program. In the

1 past the building departments have been accustomed
2 to closing permits upon receiving a CF-4 R from
3 the rater, and not a CF-6 R from the third-party
4 quality control program. That's greatly slowing
5 the adoption of the newly added third-party
6 quality control program by building departments.

7 Paragraph 7.7 of the Title 24 ACM manual
8 states that the building official may approve
9 compliance based on the CF-6 R on the condition
10 that if sampling indicated that resampling, full
11 testing and corrective action is necessary, such
12 work shall be completed.

13 Enalasy respectfully recommends that
14 the following language change: When a third-party
15 quality control program is used by the HVAC
16 contractor, the building official shall approve
17 compliance based on the CF-6 R on the condition
18 that if sampling indicated that resampling, full
19 testing and corrective action is necessary, such
20 work shall be completed.

21 Thank you very much for considering this
22 very important language change.

23 MR. SHIRAKH: Again, I would like to ask
24 for written comments. I'm trying to take notes
25 but I can't keep up.

1 MA. JONES: Sure. I actually can give
2 you a copy of this. But basically changing the
3 language to say shall instead of may is what we're
4 asking for.

5 MR. SHIRAKH: Okay.

6 PRESIDING MEMBER PFANNENSTIEL: All
7 right. I think we're moving off of the appendices
8 into the ACM manuals. And so I think we're going
9 to start with a brief overview of the residential
10 manual by Charles.

11 MR. ELEY: Thank you. First of all,
12 there's a number of reorganizational changes that
13 we've made. In fact, I think your comments were
14 in reference to what used to be chapter 7 of the
15 ACM. But, in fact, is now appendix RA-2. But we
16 can sort that out.

17 One of the major changes is that
18 chapters 2, 3 and 4 have been consolidated. In
19 the 2005 ACM manual if you wanted to know about
20 windows, for instance, you'd need to kind of flip
21 from one part of chapter 2, another part of
22 chapter 3, and another part of chapter 4.

23 So we reorganized that so there's just
24 one chapter, and everything about windows would be
25 presented in the same place.

1 And then, as I mentioned, chapter 7 now
2 resides in the residential appendix RA-2. The
3 material on field verification and diagnostic
4 testing procedures in the 2005 residential ACM was
5 scattered around in several of the appendices.
6 These are now all consolidated into RA-3.

7 Next slide, Chris. The ACM manual has
8 also incorporated a number of new modeling
9 features. Probably the most significant one is
10 the attic model. And this has a lot of bits and
11 pieces to it. But there's a new section on the
12 attic model that specifies it allows compliance
13 authors to specify the roof pitch, attic geometry.
14 Well, I guess those two are defaulted, but there's
15 attic ventilation is a factor. The roof deck, and
16 the roof deck includes the cool roof property such
17 as thermal emittance and reflectance. And there's
18 also reporting requirements.

19 In addition, there's a new slab model
20 that's been developed. And this is documented in
21 the ACM manual.

22 The modeling rules for mechanical
23 ventilation have been specified and mechanical
24 ventilation, as an energy component, will now show
25 up in the reports.

1 And there's a procedure that's been
2 added for prorating water heating energy among
3 dwelling units when there's one system serving
4 multiple dwelling units.

5 Is that a comment for me, John?

6 (Laughter.)

7 MR. ELEY: There's three optional
8 capabilities that have been added to the ACM
9 manual. These deal with evaporative coolers,
10 evaporatively cooled condensing units and ice
11 storage air conditioners.

12 These are all previously approved as
13 compliance options. And now they've been added to
14 the ACM manual as optional modeling capabilities.

15 There's also material that's been added
16 for related to the New Solar Homes Partnership
17 program, because we anticipate that the software
18 that's used for residential compliance will also
19 be used to qualify for the home energy, the New
20 Solar Homes Partnership program.

21 So there's energy efficiency
22 requirements that are added; plus there's a
23 photovoltaic performance calculation that is
24 specified.

25 Next slide. Then there's three new

1 appendices. One of them lays out the algorithms
2 and procedures for calculating photovoltaic
3 reduction. And this is used to calculate the
4 kilowatt hour production that's used in the New
5 Solar Homes Partnership program.

6 There's also a special features list.
7 This is a list of measures that need to be called
8 to the attention of the plans examiner and the
9 field inspector, and documented on the CF-1 R
10 form. These were previously scattered around in
11 various places in the ACM manual. Now they've
12 been consolidated into one spot.

13 And then the last of the new appendices
14 is a requirement that for electronic data
15 transfer. And the intent here is to make it
16 possible for the software that's used to be a
17 source of data for future analysis of the
18 standards.

19 And that's it for the residential ACM.

20 PRESIDING MEMBER PFANNENSTIEL:

21 Questions or comments on the residential ACM?

22 MR. RENOWDEN: My name is John Renowden;
23 I'm with Monier Lifetile. And we're also members
24 of the Tile Roofing Institute.

25 We submitted a written proposal. I

1 apologize, it was on Friday, so maybe people
2 haven't been able to read it yet.

3 But the subject I want to raise is in
4 reference to section 3.4.4. And this is looking
5 at the solar reflectance of cool roof.

6 And the proposal is that we would like
7 to make an addition to the 45-day language to
8 consider the additional energy saving of the
9 ventilation space between the tile and the deck by
10 raising the battens that the tiles are fixed upon.

11 And by doing this we're able to save
12 additional energy. And in order to be able to
13 offer greater consumer choice what we would like
14 to do is if they choose that option to be able to
15 reduce the reflectance requirement for that roof
16 structure to .1, or 10 percent. And this is for
17 roof structures of five pounds per square feet or
18 more.

19 The proposal is actually based on some
20 very recent research. There's been a lot of work
21 that's been done, we know, by Oak Ridge and some
22 further work is being done by the LeFarge
23 Technical Group in the UK. And they've done
24 experimental work both in the field, in the
25 laboratory and related this to a computer model,

1 which is able to show the considerable benefit of
2 the air space between the tile roof and the deck.

3 And basically this gives us a greater
4 consumer choice because we know that in certain
5 areas of the country people are very favorable to
6 light-colored tiles, and we sell actually quite a
7 lot of white tile in Florida.

8 However, in the west coast there is a
9 preference for darker colors. And what we want to
10 be able to do is to offer consumer choice such
11 that if they require the dark colors, then they're
12 able to get the performance from the roof by
13 actually increasing the ventilation between the
14 roof space and the deck.

15 So, this would give us really a proposal
16 which is based on the scientific work being done,
17 which already extends the work of the national
18 lab. We would like to share that with staff so
19 that we can progress that.

20 And it's going to maximize, really, the
21 color choice available to the customers whilst
22 maintaining the energy efficiency that we're
23 looking for. And basically it's an inexpensive
24 way of being able to get the additional
25 performance from the roof.

1 So, in our written submission we've made
2 a proposal that an addition be made to the 45-day
3 wording that if consumer wants to be able to go
4 for a darker color they can still get the same
5 performance or better by improving the ventilation
6 space between the tile and the deck.

7 PRESIDING MEMBER PFANNENSTIEL: Thank
8 you. And you have submitted that in writing to
9 our staff?

10 MR. RENOWDEN: We have.

11 PRESIDING MEMBER PFANNENSTIEL: Thank
12 you very much.

13 MR. RENOWDEN: Thank you.

14 PRESIDING MEMBER PFANNENSTIEL: Yes, of
15 course.

16 ASSOCIATE MEMBER ROSENFELD: I guess I'm
17 going to make the same comment I made; you may get
18 bored with it. I understand the consumer choice
19 is a good buzz word, but effectively what you're
20 doing is saying Californians shall now have the
21 liberty of going for darker colored roofs.

22 That doesn't help with heat islands.
23 All you're doing is taking advantage of the fact
24 that there is a flow of air underneath the roof.
25 You are indeed then absorbing more heat from the

1 sun and pumping it out into Los Angeles.

2 And you will get alternative compliance
3 credit for that if you want to. But it's sort of
4 the same thing, to my mind, as saying, well, you
5 can add another thousand pounds to your SUV
6 because you make it a hybrid, therefore it's fine.

7 I guess I just -- I don't think that's
8 delaying global warming.

9 MR. RENOWDEN: Okay, well, I mean I
10 think it's, you know, the feeling that we got from
11 the marketplace in terms of what was required out
12 there. I say, as manufacturers, we're very happy
13 to make white tile or light tile.

14 ASSOCIATE MEMBER ROSENFELD: And that's
15 the direction we should be going.

16 MR. RENOWDEN: Yes. And, indeed, that's
17 what we are doing. And, you know, what we'd like
18 to do is really offer that additional choice.

19 MR. SHIRAKH: Now, our standards don't
20 preclude the darker colors. If they use the
21 performance they can always make up for it.

22 ASSOCIATE MEMBER ROSENFELD: Right. I'm
23 just against a special exemption for roofs which
24 will heat Los Angeles or other valley towns more
25 than they did before.

1 MR. RENOWDEN: Okay, well, we will work
2 with the staff people on the evidence that we
3 have.

4 ASSOCIATE MEMBER ROSENFELD: Okay.

5 MR. RENOWDEN: Thank you for your time.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you.

8 MR. CROUCH: I'm John Crouch; I'm with
9 the Hearth Association, the HPBA. I want to echo
10 a concern that was raised by one of the building
11 officials this morning that -- and I expected to
12 see more information on how the 62.2 ventilation
13 requirement will be worked out in detail.

14 I assumed that would be in a compliance
15 manual appendix or chapter. I'm just concerned
16 that there will be many builders and many building
17 inspectors who will sort this process out without
18 more guidance and atmospherically vented hearth
19 products, be they wood or gas, may be the
20 detriment to that. Perhaps, Bruce, you have some
21 input? I hope you do.

22 MR. WILCOX: Yeah, well, we're not
23 talking about the compliance -- about the manuals
24 here today. And I expect --

25 MR. CROUCH: All right.

1 MR. WILCOX: -- there will be
2 information in the manuals that will help explain
3 how to comply with the standard 62.2 requirements.

4 There is actually a user's manual for
5 standard 62.2. I think we're going to work to
6 incorporate that material into the CEC documents.

7 MR. CROUCH: Thank you, we're very
8 concerned about this issue.

9 PRESIDING MEMBER PFANNENSTIEL: Thank
10 you, sir. Other comments on the residential ACM?

11 MR. SPLITT: Pat Splitt from APP-TECH.
12 This actually applies to both the res and nonres,
13 so I'll just do them both now so I don't have to
14 come up twice.

15 In order to obtain CEC approval proposed
16 ACMS must demonstrate that they are reliable and
17 accurate relative to the appropriate public domain
18 computer program. How is this possible when there
19 are no public domain programs? How do you get
20 around this in the ACM manuals? I mean it doesn't
21 seem possible.

22 PRESIDING MEMBER PFANNENSTIEL: Thank
23 you. You can either comment now or we will --

24 MR. SPLITT: Well, it's silence. But
25 I'd just like to recommend that since it is

1 impossible, you don't try to do it; you just take
2 the requirement out of the Administrative Code so
3 that you're not being hypocritical and requiring
4 other people to obey the law when you ignore it,
5 yourself.

6 PRESIDING MEMBER PFANNENSTIEL: Anything
7 else on the residential? Shall we move to the --

8 MR. DAY: Commissioner Pfannenstiel,
9 Commissioner Rosenfeld, everybody else, hello. My
10 name is Michael Day and today I am here on behalf
11 of OxyCom. OxyCom is a manufacturer based in
12 Holland who's been making indirect evaporative
13 heat exchangers for 12 years and selling them
14 primarily in the North -- or excuse me,
15 exclusively in the European market, and has been
16 looking to come into the United States.

17 Specifically in the ACM there's a blurb
18 here that says: compliance software shall limit
19 direct and indirect evaporative cooling
20 effectiveness to the DOEII.1(e) defaults as a
21 maximum entry.

22 For three-phase systems that would be
23 8.9 EER, while for single-phase systems the
24 DOEII.1 default is 11 EER. Understanding that
25 three phase isn't very common in residential.

1 But both of these represent a hard cap
2 that is a maximum value that the technology can
3 claim under Title 24.

4 So why is this a problem? Well, for
5 indirect evaporative coolers in particular, the
6 hard cap is a huge problem. During peak hours
7 true IEC EERs are regularly above 30. And in the
8 very hot climate zones, if used on outside air
9 precooling, can be in the 40 to 50 EER range.

10 This value is obviously increased when
11 one takes into account the TDV curves, as well.
12 Because IEC EER is completely coincident with
13 time-dependent valuation curves.

14 In the end what we are looking at is a
15 Title 24 degrade that can approach an entire order
16 of magnitude.

17 The Commission's responsibility in this
18 proceeding is to balance two forces that are at
19 play, accuracy and dependability. Accuracy is the
20 easier of the two concepts to analyze. It's
21 basically going against the DOEII.01(e) default.
22 And dependability has been voiced by staff as
23 preventing envelope degradation via excessive
24 tradeoffs.

25 However, extra care must be exercised by

1 the Commission in the dependability area because
2 to the extent that it unduly limits tradeoffs, it
3 can undermine the basis of the success of Title 24
4 overall.

5 And as has been noted in the past, the
6 standard is a neutral playing field that lets
7 multiple technologies compete in the marketplace,
8 thereby encouraging cost effective innovation over
9 time.

10 Now, that's not to say that there
11 haven't been some accepted modifications of
12 accuracy to promote dependability. For example,
13 source SEER. We adjusted the SEER ratings to
14 account for local climatic conditions. Insulation
15 installation quality. We adjusted the
16 effectiveness of installed insulation in the code
17 to account for inconsistencies found in typical
18 installations. Tight ducts, same thing.

19 But in all three of the cases noted
20 above although the Title 24 value was degraded,
21 there were three notable differences, as well. In
22 every one of these cases the degrade that was
23 applied in the compliance software was based upon
24 sound, peer-reviewed research.

25 Number two. In every one of the cases

1 that was there the effect was really to increase
2 the accuracy of the software and of the compliance
3 method together. And in none of the cases was the
4 degradation anywhere near the penalty that's being
5 applied to indirect evaporative coolers.

6 This proposal represents a huge
7 departure for this code, and in no way can these
8 actions be seen as being in harmony with previous
9 degradation actions in compliance software.

10 The beauty has always been that it
11 encouraged innovation by providing the ability for
12 different technologies to compete in a neutral
13 playing field. It's this cost effective
14 innovation that has allowed the Rosenfeld line to
15 remain flat when the rest of the country's been
16 going up.

17 But cost effectiveness requires
18 tradeoffs. It's just a fact of life. Otherwise
19 it's not cost effective, it's just a cost. Other
20 technologies get to play in this game by claiming
21 their energy efficiency-derived Title 24 benefit
22 that can be traded against one another. If one
23 technology is allowed to claim 100 percent of
24 their value or very near it, and another
25 technology is then limited to 10 to 15 percent of

1 their true value, there may be a substantial
2 problem. It restricts both trade and innovation.

3 When a degradation of this magnitude is
4 applied to one technology but is not applied to
5 others, and this degradation is based upon feeling
6 as opposed to research, the only phrase that comes
7 to my mind is arbitrary and capricious.

8 It is clearly and demonstrably impedes
9 the ability of high efficiency, indirect
10 evaporative cooling manufacturers to compete with
11 other energy efficiency measures in the
12 marketplace.

13 And this is not a small amount of
14 energy. And here are few things that are going to
15 make this more important over time. As the IEPR
16 says, we're failing to meet our greenhouse gas
17 goals overall.

18 AB-32 says that we're supposed to
19 achieve, to do all achievable energy savings. I
20 mean this goes back to Warren Alquist about
21 incentivizing the development of energy
22 efficiency, and energy conservation.

23 ASSOCIATE MEMBER ROSENFELD: John, John.
24 I think you've got the idea. I would spend a
25 minute or so hearing from staff how it got set up

1 this way.

2 MR. SHIRAKH: Michael brings up this
3 points --

4 ASSOCIATE MEMBER ROSENFELD: Michael;
5 I'm sorry.

6 MR. SHIRAKH: Michael Day. In early
7 November, right about when we were ready to
8 release the 45-day language. I guess he got a new
9 job at the time. So, he became interested in this
10 topic.

11 And we've been talking to him, and what
12 we're recommending that he did pursue a compliance
13 option. And, you know, Michael's becoming an
14 authority on --

15 (Laughter.)

16 MR. SHIRAKH: -- compliance options, so
17 that's what we're recommending that, you know, his
18 industry, if they're interested further, they can
19 pursue this through a compliance option.

20 PRESIDING MEMBER PFANNENSTIEL: Does
21 that make sense?

22 MR. DAY: It does. I just wanted to
23 bring up and say thank you to the staff that we
24 have talked about this. We've recognized this.

25 But I wanted to flag it as a pretty

1 important item, and it's something that we'll be
2 taking up after the language has been adopted as a
3 compliance method.

4 Thank you.

5 ASSOCIATE MEMBER ROSENFELD: Okay, I
6 think you got your idea across. But there's no
7 problem. I mean I'm a little puzzled. Seems like
8 you're basically bashing your way through an open
9 door.

10 MR. DAY: Well, there is a problem,
11 Commissioner Rosenfeld, with all due respect. If
12 my machine, on a peak day, is actually performing
13 at 40 EER, but under the code it's only allowed to
14 claim 8.9 EER --

15 ASSOCIATE MEMBER ROSENFELD: But you get
16 the compliance options, don't you?

17 MR. DAY: We'll be working on it.

18 PRESIDING MEMBER PFANNENSTIEL: Bruce.

19 MR. MAEDA: Bruce Maeda, CEC Staff. I
20 want to point out that the reason we ended up with
21 these particular results had more to do with water
22 consumption than with the energy impacts of
23 evaporative coolers, and also comfort concerns.
24 So, those issues will also need to be addressed in
25 the compliance option, as well.

1 PRESIDING MEMBER PFANNENSTIEL: Thank
2 you, Bruce.

3 MR. SHIRAKH: The water agency, they're
4 very critical of us for trying to increase water
5 usage.

6 PRESIDING MEMBER PFANNENSTIEL: That
7 normally is an issue.

8 MR. DAY: And there's certainly a way
9 that you can handle that with a maximum in terms
10 of gallons per ton per hour. But putting a hard
11 cap on energy efficiency which restricts the
12 performance of something to a minimal fraction of
13 what it really does is probably not the best way
14 to do it. But we'll be talking in the coming
15 months.

16 PRESIDING MEMBER PFANNENSTIEL: Thank
17 you.

18 MR. DAY: Thank you for your time.

19 MR. PRICE: Good afternoon. My name is
20 David Price and I'm with Quality Verification
21 Services. We're a California company who works
22 with over 115 heating and air conditioning
23 contractors statewide in helping them comply with
24 Title 24, mostly residential.

25 And in echoing what Anne Marie talked

1 about from enalasys in some of the wording, the
2 contractors that we are working with have found it
3 quite frustrating, not only that a lot of the
4 contractors are not complying, but the ease of
5 compliance for Title 24 is quite frustrating.

6 And as a result of that the issue
7 between the CF6R and the CF4R forms has been a
8 very major frustration for the contractors in
9 being able to utilize the 1-in-30 program that's
10 out there. And as a result and the way that the
11 forms are written are mainly for new construction
12 anyway, it's quite confusing.

13 And so we echo that. We would like to
14 see the language be changed from may allow to
15 shall, which would help alleviate a lot of that
16 problem so that the building departments will
17 recognize that program.

18 Thank you.

19 PRESIDING MEMBER PFANNENSTIEL: Thanks.
20 Other comments on the res?

21 Brief summary, Charles, of the nonres.

22 MR. ELEY: Okay, thank you. Like the
23 residential manual there's been some
24 reorganizational changes. What used to be chapter
25 7 is now relocated to NA-1, and this deals with

1 HERS verification for this limited case of ducts
2 for single packaged units where there's an attic.

3 The field verification and diagnostic
4 testing for those ducts has been moved to NA-2.
5 And the acceptance tests have been moved to NA-7.

6 Next slide. There have been a number of
7 changes to the way buildings will be modeled. The
8 first one is a revised model for slabs on grade
9 and below grade walls. This is essentially the
10 same modeling procedure as is used for residences,
11 which we talked about earlier.

12 The second thing is that we have a new
13 way to model lighting controls. And this makes
14 our assessment of lighting controls more accurate
15 when time-dependent valued energy is considered.
16 Previously lighting controls were modeled by
17 reducing the installed lighting power. Now
18 they're modeled by using the separate schedule.

19 Now, in the case of daylighting and some
20 other measures this will have a larger impact
21 during periods when TDV costs are higher. And so
22 this is felt to be a more accurate way to model
23 lighting controls. It's neutral, pretty much
24 neutral in its impact. We're not offering more
25 credit now or less credit now than we did before.

1 There's also a procedure to explicitly
2 model daylighting under skylights. Previously we
3 had to -- we used the power adjustment factors for
4 daylighting under skylights. Now the DOEII
5 modeling routines may be used for that purpose.

6 We have procedures added to model
7 tubular skylights which are becoming more popular
8 in some building types. We have clarified the
9 modeling assumptions and modified them somewhat
10 for cool roofs. And this is to specify the
11 standard design as having a thermal -- .85 instead
12 of .70, which is what the prescriptive requirement
13 is, and a few other things.

14 A credit is added for fault detection
15 diagnostic systems for packaged rooftop equipment.
16 And language is added so that ballasted roofs or
17 pavers that add mass to the top of the membrane
18 can be explicitly modeled.

19 When we went to joint appendix 4 in 2005
20 everyone's required to choose a construction from
21 joint appendix 4. And you can't modify the layers
22 that come out of that. This allows you to do that
23 in the case of ballasted roofs or pavers.

24 Next slide. We have -- the ACM now
25 recognizes several new optional capabilities or

1 features that can get credit. The first one are
2 multiple hydronic circulation loops. And
3 DOEII.1(e) which is a reference program doesn't
4 allow this. But EnergyPlus and DOEII.2 and some
5 of the more advanced programs have a way to model
6 multiple hydronic circulation loops. And this
7 could be used to more accurately approximate the
8 benefit for a number of HVAC systems.

9 There's also a procedure offered to give
10 credit for underfloor air distribution systems for
11 conventional thermal energy storage systems where
12 you would have a chiller that makes subcooled
13 brine or ice. And then there's also a optional
14 capability for direct expansion energy storage
15 systems. So, all four of those have been added as
16 optional capabilities.

17 Next slide. There's --

18 PRESIDING MEMBER PFANNENSTIEL: Charles,
19 would you check and make sure your mike is on.
20 Thanks.

21 MR. ELEY: Thank you. Maybe I'm
22 speaking loud enough that it didn't matter;
23 hopefully I was.

24 PRESIDING MEMBER PFANNENSTIEL: But it
25 doesn't pick up on --

1 (Laughter.)

2 MR. ELEY: Okay. There's two
3 miscellaneous changes. There have been some
4 revisions made to the reference method comparison
5 test to clean those up and make them more fair.

6 And then a new appendix has been added
7 which is related to the direct expansion ice
8 storage system. And this new appendix E contains
9 some DOEII.1(e) code or function which is used to
10 estimate that benefit.

11 And that's pretty much it. Thank you.

12 PRESIDING MEMBER PFANNENSTIEL: Thanks,
13 Charles. Comments, questions on the
14 nonresidential ACM?

15 MR. SHIRAKH: I think Jon McHugh has got
16 some.

17 MR. MCHUGH: Hi. This is Jon McHugh
18 with HMG on behalf of PG&E. And I came to talk
19 about a proposal we made in June related to the
20 default EER calculations for small air
21 conditioners that are rated using the SEER.

22 Next slide. So the federal efficiency
23 standards for single phase air conditioners that
24 are less than 65,000 Btus per hour have a minimum
25 efficiency requirement of SEER 13, or seasonal

1 energy efficiency ratio.

2 And the state is preempted from actually
3 requiring efficiency of air conditioners, but --
4 next slide, please -- the state can give
5 compliance credit for air conditioners that have
6 higher high temperature performance as represented
7 by the energy efficiency ratio.

8 The SEER is rated at 82 degrees;
9 includes cycling. And the EER is rated at 95
10 degrees and is at full output.

11 Next slide, please. And in the
12 residential ACM you have this type of equation
13 that looks at the SEER, strips off the fan energy
14 so you get the SEER, no fan. And then compares
15 that to its actual efficiency at 95 degrees. And
16 linearly interpolates between 82 and 95 degrees.

17 And the current default assumes that a
18 SEER 13 air conditioner has an EER of 10. And
19 that's sort of represented by that red line. And
20 as an example, showing the green line would
21 illustrate how an EER 11, SEER 13 piece of
22 equipment would be modeled in the residential ACM.

23 So you see that there's little change at
24 82 degrees and quite a bit of change at 95 degrees
25 when we have not only high air conditioning loads,

1 but also TDV is valued at its highest.

2 Next slide, please. Last time in June I
3 presented the information showing that both the
4 CEC's database and the ARI database indicates that
5 less than 10 percent of equipment have EERs that
6 are less than EER 10.

7 Next slide. So, at that meeting I was
8 asked by staff if I would take a look at the
9 actual sales of product in the market, because
10 potentially the lowest performing equipment might
11 be the high volume sellers. Since that time we
12 contacted distributors that represent over 100,000
13 SEER 13 units sold in California. From those
14 interviews nobody was reporting sales of less than
15 EER 10 equipment. And, you know, some people were
16 actually selling quite a bit of the 11.5 EER
17 equipment.

18 So, as a result, currently when a SEER
19 13, EER 11 unit is specified, and the EER is
20 verified by a HERS rater, from our perspective
21 unearned credit is given. That unearned credit
22 allows someone to weaken the stringency of the
23 rest of the standard.

24 And in the hottest climate zones the
25 credit is the greatest. And, of course, in the

1 hottest zone, climate zone 15, there's a 7
2 percent, from our perspective, unearned compliance
3 margin that can now be traded away for more
4 windows, higher SHGC, all the various features
5 that now affect the efficiency of the building for
6 the life of the building.

7 And this is shows that in our cool
8 climates this does not really have a huge impact
9 on the energy consumption of buildings. But in
10 the hotter climates, essentially the Central
11 Valley where peak demands are the highest and the
12 energy consumption in the summer is the highest,
13 this has a substantial impact.

14 Next slide. In talking with our
15 colleagues from CalCERTS and CHEERS, currently
16 approximately 10 percent of HERS ratings includes
17 the EER credit.

18 We always try to be very conservative so
19 that we're erring on the side of being too low
20 rather than over-estimating our savings, if we
21 just assume that those ratings were evenly
22 distributed across the state, where, you know,
23 half of the portions of the state there's really
24 not that much benefit to the HERS EER rating, if
25 we take that most conservative estimate we see

1 that the energy savings just from making this
2 slight little change in the ACM would save about
3 1.6 gigawatt hours per year, and about 3.7
4 megawatts of demand.

5 And just to put this in perspective, all
6 of the measures that are proposed for the 2008
7 standards, all the residential measures, this
8 demand savings is approximately 12 percent of all
9 the other residential measures. Has a huge impact
10 on CO2 emissions. And, as I said earlier,
11 basically is changing a single number in the EER.

12 So, like this Commission to consider
13 change to the ACM.

14 PRESIDING MEMBER PFANNENSTIEL: Thank
15 you. Other comments from staff on that? Bill.

16 MR. PENNINGTON: Yeah. This matter came
17 up very late in our workshop process, and we felt
18 like it was too late to be considering. There
19 also are perhaps tricky preemption issues related
20 to the idea. And so we felt like we were not in a
21 position to consider it in this round of
22 standards.

23 I think it's a useful thing perhaps to
24 consider for the next round of standards.

25 PRESIDING MEMBER PFANNENSTIEL: You

1 don't think between now and the issuance of the
2 15-day language you could do some more
3 investigation? Especially into the preemption
4 question is always tricky. But if it is something
5 we can do, you might want to see if there's
6 something we could do. We can talk later, but,
7 you know, clearly it's an interesting --

8 MR. SHIRAKH: There's also an
9 interactive effect that's in this measure, it's
10 supposed to be on -- there's an interactive effect
11 within this measure, and the air conditioning
12 sizing calculation credits. And so we've been
13 negotiating with ConSol and CBIA. So this impacts
14 all those projects, as well, too.

15 And we thought this was not the right
16 time.

17 PRESIDING MEMBER PFANNENSTIEL: Thank
18 you. Pat.

19 MR. EILERT: Thank you. Pat Eilert with
20 PG&E. We, of course, at PG&E are standing by
21 ready to help if you can work it in. Thank you.

22 PRESIDING MEMBER PFANNENSTIEL: Thanks,
23 Pat. Other comments, questions on the
24 nonresidential ACM manual?

25 MR. WILSON: Jackie?

1 PRESIDING MEMBER PFANNENSTIEL: Yes,
2 John.

3 MR. WILSON: Just want to say one thing
4 related to this issue that Jon and PG&E raised.
5 And that is in the energy bill this year we tried
6 to change the preemption as it relates to Title
7 24. And take out or modify the clause that
8 requires us to use NAECA minimum appliances in
9 setting the budgets, which I think does relate
10 pretty closely to what you're suggesting.

11 And I think your analysis shows the
12 magnitude of savings can be quite large. And, of
13 course, if we actually tried to optimize HVAC
14 equipment, even going beyond what you are
15 suggesting, the savings would be huge.

16 And so we didn't get it into the bill
17 this year, but we actually came closer than I
18 expect to. And so I think there will be future
19 opportunities to get something like that into
20 NAECA and like to call upon some friends in the
21 room here to help with that.

22 PRESIDING MEMBER PFANNENSTIEL: Good
23 information, thanks.

24 All right, sounds like we have finished
25 the review of the ACM manuals. Nothing else here.

1 Now we're going to talk about our review
2 of the negative declaration. Rob.

3 MR. HUDLER: Rob Hudler from the Energy
4 Commission. First, I'll apologize for hiding out
5 there, but I've got a really bad cold, so.

6 MR. RAYMER: Thank you.

7 (Laughter.)

8 MR. HUDLER: As part of any mandated
9 require the California environmental protection
10 requirements require that we do an analysis to
11 determine if we have any significant environmental
12 impact related to the legislation or regulations
13 we propose.

14 And so in response to that mandate under
15 the code of regulations, staff undertook, as the
16 lead agency for these proposed requirements, to
17 determine if there's any substantial evidence that
18 we would create a significant environmental
19 impact.

20 And we obviously have the option of
21 either doing an initial study with a negative
22 declaration or if we do determine that there is a
23 significant impact, we would have to have done a
24 complete EIR.

25 Staff's findings basically is that we

1 found that the energy efficiency standards
2 concludes that there were no significant impact on
3 the environment, and that staff did, in fact,
4 recommend that the Energy Commission adopt a
5 negative declaration for the 2008 building energy
6 efficiency standards for the residential,
7 nonresidential and outdoor lighting standards.

8 There's a bunch of data that we
9 generated to that. If someone has any questions I
10 can respond.

11 PRESIDING MEMBER PFANNENSTIEL:
12 Questions from the dais? Any other questions in
13 the room on this?

14 Good job. Moving along. I'm sorry, you
15 need to go to the microphone.

16 MR. SPLITT: Are we also talking now
17 about the ISR, initial statement of reasons? Or
18 is that later?

19 MR. SHIRAKH: There is a general comment
20 period that's coming up right after this. If you
21 wish, you can --

22 MR. SPLITT: Well, but -- initial study,
23 isn't that also the initial statement of reasons?
24 It's not? It's something different? Okay,
25 thanks.

1 PRESIDING MEMBER PFANNENSTIEL: So there
2 isn't anything else on the negative dec? Okay.

3 Now is the time that we are open for any
4 other general comments --

5 (Laughter.)

6 PRESIDING MEMBER PFANNENSTIEL: -- on
7 any part of what we've covered today, or generally
8 the 45-day language. Okay, go ahead.

9 MR. SPLITT: Okay, it's Pat Splitt from
10 APP-TECH, again. And my first comment has to do
11 with the initial statement of reasons and HERS
12 requirements.

13 I'm not against the HERS requirements,
14 but I don't believe that they've been properly
15 adopted right now, and I'd like to see at this
16 stage of the game we'd finally get around to doing
17 it right.

18 If the CEC wishes to produce an
19 enforceable HERS verification system they must
20 start over from scratch in the 2008 adoption
21 proceedings with a completely new rulemaking.

22 The CEC has clearly not done this. In
23 this sense, the HERS requirements are not even
24 mentioned in the ISR. They're just not there.

25 The current HERS rules in the ACM

1 manuals are underground regulations, in my
2 opinion, that are totally unenforceable. They are
3 first inserted into the ACM manuals in 1998. The
4 summary of the changes listed in that manual in
5 the overview of the 1998 residential ACM manual
6 did not mention HERS in any way. They were buried
7 in the midst of instructions for program vendors.

8 The CEC did not intend for the ACM
9 approval manual to be used for any purpose other
10 than the design of programs for use with the
11 energy standards. The inclusion of the HERS
12 program in the 1998 ACM appears to be a clear
13 violation of CEC policy.

14 And since they weren't correctly adopted
15 then, you can't avoid going through the adoption
16 procedures now by just saying, oh, we're just
17 moving them from here to there and assuming that
18 everything was all right back there. It wasn't
19 all right back there.

20 And I haven't said anything till now
21 because I was assuming we were going to fix this.
22 But it's not clear that you are. So I would
23 just -- I'm sure the HERS people are ready to
24 pounce on me. But I'm not against it, I'm just
25 wanting you to do this right for a change.

1 And you started to do this by trying to
2 move these regulations from the ACM into the
3 appendices, but you have to go through the whole
4 procedure. You can't just slip them in from some
5 mysterious crack. You have to start from scratch.

6 And it's very clear that 1998 the CEC
7 did not intend for the ACM approval manual to be
8 used for any purpose other than the design of
9 programs for use with energy standards. And that
10 only program vendors would ever look at that
11 thing. And you can't say that it had any sort of
12 public review.

13 So, I'd like to hear what the Commission
14 is thinking about. Do you still have time to
15 start this thing, little pieces, over, like
16 mentioning it in the ISR? Is there like 45-day
17 language for that, that you can make changes?

18 PRESIDING MEMBER PFANNENSTIEL: We will
19 refer this back to our attorneys that we've been
20 working with on this.

21 MR. SPLITT: Okay. I have other things.
22 Well, just briefly, I'm sort of unhappy about all
23 the problems I've been having over the years
24 trying to get somebody to seriously listen to my
25 concerns, which have a lot to do with the 2005

1 standards and the procedures that I thought were
2 wrong then, which are the same procedures that are
3 being used now. And just even getting
4 communications publicized.

5 So I tried, I sent all the Commissioners
6 a 17-page report in January which not one of you
7 or anybody on your staff has even mentioned to me,
8 or asked me anything about, where I thought it
9 made some serious allegations.

10 One reason I made it sound serious
11 because I really wanted you to respond, and you
12 didn't. So, I made a mistake.

13 But, I have also tried to get paper
14 included into the workshops. And I sent stuff off
15 to the Commission on the 22nd of February to be
16 included in the workshop that next week. And it
17 didn't make it into the proceeding; it didn't make
18 it into the public comments mysteriously.

19 So, once I discovered that I bugged the
20 Commission again, and finally, right before the
21 last workshops, they, I thought, agreed to put
22 them onto the record for that workshop. But, they
23 didn't go into that workshop, they got slipped
24 into the public comments for the previous
25 workshop, which, you know, people were done

1 looking at months ago.

2 And the date that they updated that and
3 put my documents in there wasn't updated on the
4 cover sheet for saying when the last update was.
5 So if you look at the last update date, it doesn't
6 have my date in there. Someone would never know
7 that my stuff was in there.

8 The actual objection I had, the protest,
9 still isn't in there today. What I sent was a
10 protest letter saying I wanted the process looked
11 into and I attached the document I gave to the
12 Commissioners. An expurgated version of the
13 document that I did, to sort of make people around
14 here a little bit happier, got into the public
15 comment, but the original comment and my comments
16 that I wanted considered didn't get in. Never
17 did.

18 As a matter of fact, I even had Anthony
19 Brunello, Deputy Secretary of Climate Change and
20 Energy at the State Resources Agency relay those
21 comments to the Executive Director. And they
22 still aren't in there.

23 So I don't know what I have to do. Am I
24 invisible? I mean --

25 PRESIDING MEMBER PFANNENSTIEL: I can't

1 possibly imagine why your comments submitted
2 presumably to the docket in this instance have not
3 shown up. I don't know of other cases where
4 information submitted to dockets, other than the
5 occasional administrative error, would not show up
6 in the record.

7 Certainly if it's there it should be in
8 the record if it was properly submitted. We
9 probably should offer it up again and we'll get it
10 into the record.

11 MR. SPLITT: Well, it's a little late to
12 have it considered at these workshops.

13 PRESIDING MEMBER PFANNENSTIEL: No, the
14 record of this workshop, the written comments are
15 coming in January 3rd.

16 MR. SPLITT: Right, but this was a year
17 ago. At any rate, there's one more thing I wanted
18 to mention that had to do with the HERS
19 requirements, just to put it on the record in case
20 people think maybe I'm imagining what the
21 Commission's policy was back then.

22 This is a cover letter from the 1998
23 energy efficiency standards, residential
24 alternative calculation method approval manual for
25 lowrise residential. This is a Commission

1 document. I'm not making this up.

2 And there's a big note here that's in
3 bold, I didn't embolden that, either, the
4 Commission did. And it says: Note, the low rise
5 residential alternative calculation method ACM
6 approved manual is intended strictly for those
7 persons who want to design a calculation computer
8 program for use with the energy standards. Before
9 such programs may be used to demonstration
10 compliance with the standards, they must be
11 approved by the Energy Commission through the
12 process described in the manual. The residential
13 ACM manual, itself, is not to be used for
14 compliance with the energy efficiency standards."

15 Now, that's the Commission policy I'm
16 speaking of. I'm not imagining this --

17 PRESIDING MEMBER PFANNENSTIEL: I'm
18 sorry, what was the date on that?

19 MR. SPLITT: 1998, and that's when the
20 HERS requirements were slipped into the ACM
21 manual. The same document that has this statement
22 on it has those HERS requirements in there. And
23 that's where they originally came from. And they
24 haven't been adopted.

25 And I guarantee you that OAL would look

1 at this and they'd agree with me. And that I
2 have, in the past, brought actions of the
3 Commission to the Office of Administrative Law,
4 and had them declared illegal. Packages 1 through
5 6 back years ago, but those were declared illegal
6 because the Commission placed them in the
7 residential manual instead of in part 6.

8 So there's a precedent. I set the
9 precedent. If it's illegal for you to try to get
10 things enforced by putting them in the manuals,
11 how can it be more legal to do it in a document
12 where it's strictly prohibited?

13 If I go to OAL, the HERS requirements
14 are illegal and they're thrown out like that. So
15 I'd suggest that maybe we get together somehow and
16 get you guys to do it right this time.

17 PRESIDING MEMBER PFANNENSTIEL: Thank
18 you.

19 MR. SPLITT: Thanks.

20 PRESIDING MEMBER PFANNENSTIEL: Further
21 comments, other comments? Yes, Mike.

22 MR. HODGSON: Commissioners and staff,
23 I'd like to make general public comments from the
24 California Building Industry Association. We were
25 kind of waiting till we got through the different

1 residential manuals, et cetera, trying to come
2 back and -- is Max still here? I wanted to
3 mention ASHRAE62(2) just to frighten him. Oh,
4 he's not. So, we made it so far without any
5 discussion on that.

6 First off, I'd like to compliment staff
7 and the consultants. The 2008 standards are
8 probably the most organized update of the
9 standards that I've had the pleasure of working
10 with. And unfortunately, I can admit this is my
11 eighth revision to the standards.

12 And a lot of you are laughing, but a lot
13 of you were here --

14 MR. SHIRAKH: Yes.

15 (Laughter.)

16 MR. HODGSON: -- during all of those
17 standards, right? The only one who's not are
18 probably the people in the front of the room,
19 right. Compliments especially to Mazi, Bill,
20 Charles, Ken and Bruce for their work and being
21 responsive.

22 A lot of dialogue going on, a lot of
23 cooperation, state's in some type of significant
24 issues from the 2001 electricity crisis. And now
25 we're trying to deal with AB-32, so there's a lot

1 of balls in the air and a lot of people to satisfy
2 at the same time.

3 CBIA will support this revision because
4 the residential new construction industry will do
5 their part in supporting California's energy needs
6 and in reducing carbon emissions. The increase in
7 stringency, by our analysis, is approximately 20
8 percent. This is the largest increase ever on
9 record.

10 This costly increase occurs when the new
11 housing market is at its lowest rate in recorded
12 history since 1980. And we're warning you that
13 there is going to be some significant backlash
14 from some of our members. But Bob will keep them
15 under control.

16 (Laughter.)

17 PRESIDING MEMBER PFANNENSTIEL: Good to
18 know.

19 MR. HODGSON: All right. CBIA supports
20 these standards, as I mentioned previously,
21 because we think these are good for California's
22 future.

23 We have a couple concerns that we'll
24 have expressed, and we would actually like to go
25 beyond those concerns and have two global concerns

1 that we think have affected these standards, have
2 come up in conversations among ourselves, and
3 today by testimony.

4 Probably the largest concern we have is
5 enforcement of the standards. I mean it's a
6 known, I don't want to call it a fact, but there
7 are numerous studies out there that say that
8 there's very poor enforcement of the Energy Code.

9 This is due partly to complexity; it's
10 due to rapid change; it's due to a complicated
11 market; it's due to the construction process,
12 itself. The ITRON study, which was an overview of
13 2003 housing showed that about half the homes were
14 not meeting compliance in the State of California.
15 These are new homes.

16 The CEC Staff has recently testified at
17 hearings that potentially 30 percent energy
18 savings are left on the table through lack of
19 enforcement. And the BII field study last year on
20 third-party inspections reported on the CF6R and
21 CF4R, which is our enforcement forms in the field,
22 approximately 65 percent of the marketplace is in
23 noncompliance.

24 So I mean these are very alarming
25 statistics. And I think they point directly to we

1 need to all do a better job. And we're here to
2 say that we'd like to do that, and we're willing
3 to cooperate with staff, with especially our
4 partners at CALBO to improve the enforcement of
5 the standards.

6 The enforcement of the standards to us
7 are very very important because they prevent
8 potential liability to the construction industry.
9 In addition, the CEC is predicting their energy
10 savings from these standards. So if they're not
11 accurate or reliable then I think we both have
12 problems.

13 We understand that you're beginning to
14 develop an enforcement team. We fully support
15 this and their actions to level the playing field.
16 We're also concerned that as the standards get
17 more and more complex we think this is probably
18 the key cause of the enforcement issue.

19 And so in a slow market we emphasize
20 again it's time for training, it's time to get
21 simple, and it's time to work well with CALBO.

22 The second area of concern that the
23 building industry has is the lack of impact of
24 this energy code on the retrofit market. There
25 are 13 million homes in the State of California.

1 There are approximately 120,000 homes, and I'm
2 talking about detached and attached, added each
3 year. That means over a ten-year period of time
4 less than 10 percent of the market is built.

5 CBIA is disappointed at the lack of
6 input from the AB-549 process. As a simple
7 example, if ceiling insulation were installed in
8 homes that were built before the Energy Code, in
9 all homes before the Energy Code, we would save 5
10 billion kilowatt hours a year. That's over 50
11 times greater than the savings from this, the 2008
12 Energy Code, on residential new construction.

13 CBIA would like the Energy Commission to
14 focus on improving energy efficiency in the
15 existing market and we have two requests. The
16 first is at the adoption of the 2005 standards,--
17 and I'm beginning to sound like Pat Splitt and I
18 think that's an honor, Pat, wherever you are --

19 (Laughter.)

20 MR. HODGSON: --CBIA asked that the HERS
21 rulemaking for existing housing be reinstated and
22 completed. That was three years ago. We received
23 affirmation from the Commissioners at that time
24 that this would be done. It's never been
25 completed.

1 Having HERS systems available to
2 homeowners allows them to make educated choices
3 for energy efficiency. CBIA repeats our request
4 for the HERS process to be completed for existing
5 housing. This is a very useful tool and it's
6 nonexistent in the market.

7 The second request is CBIA would like to
8 work with the Energy Commission on the impact of
9 energy efficiency in existing housing. This
10 effort will center on HERS ratings of homes at the
11 time of sale, and possibly requiring improvements
12 in their efficiency at time of sale.

13 CBIA will ask for the CEC's assistance,
14 both technically and politically, and their
15 expertise in developing possible legislation in
16 2008.

17 We look forward to working with staff.
18 We would like to resolve our maximum cooling
19 capacity issues and our compliance documentation
20 issues. And we thank you for the opportunity to
21 comment.

22 PRESIDING MEMBER PFANNENSTIEL: Thank
23 you, Mike. You may have noticed in our Integrated
24 Energy Policy Report that the Commission adopted a
25 week or so ago, we did point out that time-of-sale

1 retrofit was essential. And we proposed that
2 legislation be sought to make this happen as soon
3 as possible. So we look forward to working with
4 CBIA and others on that legislation.

5 MR. HODGSON: Great, thank you.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you. Yes, please.

8 MR. BACHAND: Mike Bachand from
9 CalCERTS, Commissioners. I just want to remind
10 maybe the Commissioners and other people here a
11 little bit about the HERS industry. Because I was
12 a newcomer to the industry about five years ago in
13 2003.

14 At that time there were about 300 HERS
15 raters statewide. Now there's close to 2000. The
16 industry has evolved from a niche industry to a
17 strong, revenue-based, productive, competitive,
18 growing-pains-type of industry.

19 Yeah, there are some problems out there.
20 There's HERS ratings that are not being done
21 correctly, and there's other issues.

22 But I urge the Commission to think about
23 the strength of the HERS tool that they have now
24 compared to what many of you have, you know, grown
25 up with, so to speak. And so I want to reiterate

1 that there's a lot of competition out there.
2 Prices have come down. That affects cost
3 effectiveness of HERS rating and sampling.

4 And it's a tool that should not be
5 weakened in the middle of its growth. It's at a
6 time right now when strengthening its capabilities
7 and its influence could be a very good thing, and
8 can demonstrate kilowatts of energy savings.

9 Thank you.

10 PRESIDING MEMBER PFANNENSTIEL: Do you
11 market that service? Do you promote it? Are
12 there advertisements around promoting the fact
13 that individual residential consumers can contact
14 a HERS provider? How does that work?

15 MR. BACHAND: There's a couple of people
16 in our organization -- staying in my organization,
17 arms length from us, we're just an oversight
18 agency -- but some of our raters do that. They
19 have a consumer program that they market,
20 themselves. We don't personally market that. I'm
21 not sure that that would be an appropriate thing.
22 I'd have to examine whether that's an appropriate
23 relationship between me and raters. It probably
24 would be okay.

25 But there are a few people out there

1 doing it. It's very fledgling right now. And
2 it's not well marketed from our standpoint.

3 PRESIDING MEMBER PFANNENSTIEL: Because
4 I don't think I've seen ads for this. I don't
5 think that --

6 MR. BACHAND: I'd certainly be
7 willing --

8 PRESIDING MEMBER PFANNENSTIEL: -- as a
9 regular homeowner that I would know where to call
10 or I don't know that there are ads like this in
11 the yellow pages, or other things that normal
12 consumers would go and look for.

13 MR. BACHAND: Certainly. I'd be willing
14 to entertain dialogue on that, too.

15 MR. PENNINGTON: Seems like maybe you're
16 talking about two different things here. And the
17 use of HERS raters for different purposes maybe as
18 the core to the two different things.

19 I think you're talking about home energy
20 ratings for doing an energy audit and identifying
21 cost effective measures that you might do as a
22 homeowner.

23 And I think you're talking about HERS
24 raters being used for field verification for Title
25 24.

1 MR. BACHAND: Yes, that's true. I don't
2 think those things necessarily need to be
3 completely separated, but at the time they
4 basically are.

5 PRESIDING MEMBER PFANNENSTIEL: Yeah,
6 that's right. It's the same sort of skills was
7 kind of what I'm thinking.

8 MR. PENNINGTON: It is.

9 MR. BACHAND: Same people and the
10 same --

11 PRESIDING MEMBER PFANNENSTIEL: Same
12 people, the same network, --

13 MR. BACHAND: The capacity out there for
14 HERS raters right now, there's a lot of them
15 standing around with their duct blasters ready to
16 go to work, you know. There's lots of framers
17 doing the same thing.

18 PRESIDING MEMBER PFANNENSTIEL: Right.
19 I think there's probably a lot of need for them,
20 also.

21 MR. BACHAND: Certainly, certainly.

22 PRESIDING MEMBER PFANNENSTIEL: Thanks.

23 MR. BACHAND: Thank you very much.
24 Thanks, Bill.

25 PRESIDING MEMBER PFANNENSTIEL: Wait a

1 minute, Bob -- yes.

2 MR. SCOTT: Good afternoon,
3 Commissioners. My name's Robert Scott. I'm the
4 Executive Director of California Home Energy
5 Efficiency Rating Services, or CHEERS.

6 I was with CHEERS back in 1993 when we
7 were in this room and there was almost a
8 regulation for HERS, for home energy rating
9 systems, that was adopted. That kind of did not
10 happen.

11 Our focus had been on, for CHEERS, was
12 in existing housing because Title 24 was there for
13 new construction. I can assure you that one of
14 the targets that CHEERS is moving towards is
15 really looking at those 13 million existing homes
16 to make sure that we can address that.

17 And we're wholly supporting that and
18 will be working in that area. I think it's been
19 great for the HERS industry to have had the
20 ability to have HERS raters doing things, getting
21 a role, being recognized in the building process.
22 And it's been very helpful.

23 And I think it will only be, having done
24 that, that it will help the existing home programs
25 develop in the same way that this has.

1 So, thank you.

2 PRESIDING MEMBER PFANNENSTIEL: Thank
3 you very much. Bob Raymer.

4 MR. RAYMER: Thank you, Madam Chair.
5 Bob Raymer with California Building Industry
6 Association.

7 And to follow up on some comments that
8 you were making, I think that's a very attractive
9 move that industry would embrace.

10 You may or may not be aware the Building
11 Standards Commission and several other agencies
12 are about halfway through the drafting of the
13 first set of green building standards for the
14 state. These are going to go into part 11 of
15 Title 24. And industry, particularly the building
16 officials, are going to need some assistance in
17 getting these things verified.

18 The indoor air quality and the
19 ventilation, the water conservation measures with
20 at least on the inside of the house, and a number
21 of the other provisions that are going into the
22 first set of guidelines.

23 It would be very useful since the
24 building officials are going to have a lot of
25 their time taken up in other areas, unrelated to

1 any of this, it would be good if there was an
2 industry that could move in to help us verify all
3 this.

4 I'm not saying that, you know, energy
5 raters should automatically do this, but it
6 certainly would be a way to increase the
7 marketing. And obviously, there's going to be a
8 market for this in the existing housing stock. I
9 know for a fact that there's going to be a bill
10 introduced regarding energy audits at time of
11 sale.

12 And so there's probably, given what the
13 PUC and what you have been doing, in terms of, you
14 know, long-term policy, I suspect we're going to
15 see dozens of bills in this area. That's just one
16 of them. And this could help fill that void.

17 And to go on what the building officials
18 were saying this morning, yeah, they are spread
19 thin. The market is going down, but so is their
20 staff. And at the same time their staff is going
21 down, the state is making the first transition
22 from an old type of national building code as our
23 basis to a new one.

24 That transition will get made. It
25 starts on January 1st. But it's going to take

1 them about a year to two years to kind of get the
2 bugs worked out of that.

3 At the same time there's another of
4 other peripheral issues such as disabled access,
5 where the former Attorney General has done a few
6 things. It's increased their desire to do a
7 better job of enforcing those provisions. They're
8 just spread really thin.

9 And if there's some way that perhaps the
10 home energy rating service can kind of move into
11 this area to assist them at a level that they find
12 comfortable with, that would be wonderful.

13 So, I like the direction you are heading
14 with that, and we would support that. Thank you.

15 PRESIDING MEMBER PFANNENSTIEL: Thank
16 you. Further comments.

17 MR. SPLITT: I have an Irish and Polish
18 background, and a bit of a temper, so I decided I
19 should sit down for awhile, but I still had a
20 couple more things to say.

21 Basically I'd just like to recommend
22 that I think there must be some slop time that you
23 fit into your schedule to allow for things to go
24 wrong until the final date when you have to
25 approve the standards.

1 And I'd like to see if you'd move that
2 slop time forward to give us a little bit more
3 time now to go over a lot of these concerns that
4 people have, to try to, as much as we can, in the
5 time that's allowed, try to fix things now.

6 I don't think it would be a problem to
7 put it off -- I don't know, could we put it off
8 six months? I don't know how much -- I know
9 there's got to be some time in there. But I don't
10 want to, you know, monkey up the whole thing by
11 blowing it out of the water, but I'm sure there's
12 time that we could use to look at this thing more
13 closely, the items that people are concerned
14 about.

15 In particular I think some of the
16 procedures and regulations are just totally
17 unclear right now. Without knowing what the
18 ultimate procedure that we come up in the
19 compliance manuals are going to be, what the
20 process is going to be. Then we can look back and
21 see if the regulations actually match up with
22 that.

23 Because right now I know people that go
24 to all these workshops, they're working these
25 little details and they're into the detail, but in

1 their mind they imagine how it's all going to
2 work. And in everyone's mind it works fine. But
3 everyone's imagining something different.

4 So, I think it would be good if we could
5 delay this as long as we can. And for those
6 sections that really have a lot of questions,
7 maybe the contractor who's working on the manuals
8 could just concentrate on trying to get the
9 procedures for those pieces close enough to
10 reality so people could review them in context
11 with the regulations.

12 Like right on top of my mind I'm
13 thinking of all the acceptance stuff for
14 daylighting for skylights. I can't make any -- I
15 don't know what they're talking about. And
16 whoever wrote that probably it all makes sense to
17 him because he's seeing what happens. But it's
18 not in the words. And it's not possible for
19 people to really say yea or nay because it's just
20 words, it doesn't mean anything.

21 So I'd like to propose that we delay
22 things as much as possible. This would be in
23 light with what the building officials want. They
24 want more time to discuss this.

25 Try to finish or at least put together

1 as much as you can in whatever period of time we
2 have, the procedures that we imagine people would
3 use to implement the standards that we'd be
4 putting into the manual. So we can then look back
5 and see whether that works.

6 I'm assuming we're going to do that, and
7 all of a sudden we'll have our procedure. Then we
8 look at the regulations and say, well, wait, they
9 don't match.

10 So we will have a chance then to change
11 the regulation to make it something that actually
12 is do-able.

13 So I think that's one of the big
14 problems now is this procedure we have where we
15 adopt the regulations and then we do the manuals
16 later. And anybody has a problem, we'll fix it in
17 the manual. And what we've just heard, that the
18 manuals aren't regulations. No matter what you
19 put in the regulations it's not -- in the manual,
20 it's not going to fix a problem in the regulation.

21 So, if you identify a problem if you can
22 see a conflict between what you come up in the
23 manual and the regulation, you got to still have
24 time to fix the regulation. Or else you're going
25 to be waiting till 2011.

1 And along with all AB-32 or whatever all
2 of those things were, there's SB- was it 109?
3 That by 2010 requires a 20 percent reduction in
4 electricity use. Was it Simitian 2006?

5 PRESIDING MEMBER PFANNENSTIEL: That's
6 an increase in the renewable portfolio standard?

7 MR. SPLITT: I think so. Well, at any
8 rate, it mainly had to do with photovoltaics. But
9 it's based on 20 percent of the total electric
10 use. So they want 20 percent relative to the
11 electric use. So if the electric use is going up,
12 it's going to be harder to get that 20 percent.
13 And if the electricity use goes down because of
14 conservation, it'll be easier to get that goal.
15 And this is in 2010. So you can't wait till 2011
16 to fix these problems.

17 So I think you really should try to put
18 off as much as you can. I'm not trying to screw
19 everything up. I'm just trying to get these
20 problems fixed that I've been living with for
21 years.

22 So, anyway, that's my suggestion. Put
23 things off and try to get that done now instead of
24 waiting till 2011.

25 And then I just want to make one final

1 comment about the City of Santa Cruz, my hometown,
2 where I work. That they have adopted green
3 building ordinances. For last year, to get a
4 building permit, either residential or
5 nonresidential, on top of the Energy Code, you
6 have to meet green building requirements, get so
7 many points depending on whether you just want a
8 permit or you want accelerated permit approval, or
9 get a green building award.

10 Well, they're going to revise those
11 programs in January. And one thing they're going
12 to do is the chief building official will be
13 adding a requirement for mandatory compliance with
14 a quality insulation installation requirements.

15 And that'll be a requirement to get a
16 building permit.. And they're not doing this
17 because the CEC said they have to do it. They're
18 doing it because their own constituents want it.
19 And they developed a citizens group that went to
20 the city council and said we want tougher
21 standards. And they're going to make this
22 mandatory, quality insulation. Because it makes
23 sense.

24 So, I don't think where the Commission
25 is right now is leading. They're trailing, and

1 people are just leaving you behind. So I think
2 you've got to do something to fix this thing, it's
3 just way too complicated.

4 Anyway, I'm done now, for sure.
5 Promise.

6 PRESIDING MEMBER PFANNENSTIEL: Thank
7 you. Sir.

8 MR. ACKER: Commissioners and Staff,
9 it's a pleasure being here. Thank you for the
10 invitation. Name is Larry Acker. I represent
11 Advanced Conservation Technology, Inc.

12 And I've got a couple of issues that I'd
13 like to bring to the table if I might. In regards
14 to the efficiency standard on the water heating
15 side, one thing becomes very apparent to me and it
16 was brought out earlier today, that insulating hot
17 water lines is a slam-dunk; it's a no-brainer. I
18 think all water lines that are hot water lines
19 should be insulated. I'll just carry that through
20 from the previous comment that was made. It's the
21 cheapest way to save energy in your home.

22 In regards to the hot water distribution
23 side, I think it's been agreed upon by the staff
24 that if you have hot water distribution that is
25 controlled, or electronically controlled, it's

1 definitely the best way to supply hot water in the
2 house.

3 In regards to the motion sensors that
4 was part of the issue that was brought up,
5 everybody seems to believe that motion sensors
6 require a little more energy than activating the
7 system by a button or some other form. And I've
8 expressed this in a letter dated June 16th to the
9 staff, to try to explain how a motion sensor that
10 we use actually works.

11 So what I did is I actually brought one.
12 If I could demonstrate this. Motion sensors, as
13 we know them, send out signals constantly. That
14 is not efficient for what we need to use.

15 There's two things that make electronic
16 activations work effectively. Number one, a
17 motion sensor that only sends out a signal when
18 there's a demand for it. This particular motion
19 sensor is not a privilege motion sensor. You can
20 buy these, they're just a little more expensive.

21 Basically what this one does, it sends
22 out a curtain, goes out about a foot wide and
23 about 20 feet deep. And it can be adjusted down
24 to four feet, which means that my curtain stops
25 four feet from wherever that motion sensor is.

1 This also sends out only one signal.
2 That one signal is picked up by electronics in a
3 pumping system that moves water on demand. This
4 goes into a lockout until someone actually steps
5 out of that room, and it has to reset itself two
6 to three minutes later.

7 That means that sensor will not activate
8 or keeps constant motion going towards the pumping
9 system.

10 Now, the key to all electronic pumping
11 systems are the electronics in the pump. They
12 work on a delta T, which means that if your water
13 in the line is already established at a 60 degree
14 temperature, when hot water moves towards that
15 line, the pump shuts off about 6 to 8 degrees
16 above that ambient temperature. So it will shut
17 down about 68 degrees. Why? Because within two
18 feet you have 120 degrees.

19 If somebody reactivates the system, or
20 that motion sensor sends another signal, the pump
21 and electronics won't go on because it already
22 indicates hot water is there.

23 There's two times a demand -- or two
24 times a circulating pump should never run. One,
25 when there is no demand for hot water. The other

1 one when there's already hot water in the line.
2 That takes care of about 98 percent of the time a
3 pump should pump water through a system.

4 This should allow as much credit as a
5 button-activated system. Now, the study that was
6 done by NREL with Building America in Florida this
7 last year, they were studying homes and the energy
8 load factors on those homes.

9 They found out they had a much higher
10 load factor than they should have, couldn't
11 isolate the case. They finally isolated it that
12 they had a recirculating system that was running
13 constantly. They put in a electronic pumping
14 system with three motion sensors.

15 I'll read you the results. From before
16 525 therms a year, .06 therms for 8760 hours. It
17 went from 528 therms to between 5 to 10 therms per
18 year. On a motion sensor.

19 The point that I'm trying to bring up is
20 that on looking at your controls for circulation
21 of hot water, you need to take into consideration
22 electronic pump systems and also consider motion
23 sensors as part of your buttons, as far as
24 controls. There should be any less or any more.
25 It probably would represent less than \$1 a month,

1 top rated difference between a motion sensor and a
2 button. It's negligible.

3 I'd like to thank everybody for allowing
4 me to come. Thank you.

5 PRESIDING MEMBER PFANNENSTIEL: We'd
6 like to thank you for your comments. Thank you.

7 Further? Any final comments from staff?

8 MR. PENNINGTON: Just like to reiterate
9 the desire to have written comments by January
10 3rd. And that would be very helpful for us to get
11 prepared for 15-day language.

12 PRESIDING MEMBER PFANNENSTIEL: Let me
13 close with a comment on timing. We have heard
14 today some pleas for extending the timing and
15 taking a little longer, some months, six months,
16 something, to give more people more time on this.

17 I have to say, and staff knows this,
18 that I've been one of the ones who have really
19 been pushing us to get going on this. I feel very
20 strongly. I think Commissioner Rosenfeld said it
21 earlier very well, that we do face climate change,
22 and we do face issues that more efficient
23 buildings can really help, can really address.

24 We're all part of the solution to what
25 we can do on climate change. And putting it off

1 until we get it perfectly designed is not going to
2 save the planet. We need to keep moving on this.

3 To the extent we can make some of the
4 changes people have asked for, some of the
5 clarifications, some procedural changes, to the
6 extent we can do that concurrently, we certainly
7 will.

8 To the extent we are able to take the
9 information today that people raised and in the
10 written comments and improve what we have for the
11 15-day language, we intend to do that. That's
12 what we're going to do.

13 And then even after the 15-day language
14 goes forward, there'll be some processes that can
15 continue while that language is going through OAL.

16 So, there will be improvements. And
17 when we finally have adopted language fully
18 implemented in California, it will be better than
19 it is today. That's the nature of this process.
20 That's why we're all here.

21 And we appreciate the comments.
22 Certainly the technical advice, and the changes,
23 and all the information. That's how we make our
24 products better.

25 But at the end of the day we really do

1 need to keep pushing to have better building
2 standards in California. We need to incorporate
3 what is cost effective and technically feasible
4 into Title 24. We need to be ahead of what we
5 can.

6 We need to move faster than people might
7 be otherwise comfortable, because we are the most
8 cost effective way of fighting global warming.
9 People represented here have the ability to make
10 that happen.

11 So, I'm going to keep pushing the staff.
12 I want to do so wisely, so I do want to be
13 informed, and sitting here today helped me a great
14 deal. I learned a lot, and I know perhaps better
15 what to look for in the standards.

16 But having heard a whole day's worth, I
17 still want us to move these standards forward, get
18 them adopted by the Commission, and then approved
19 by OAL so they can be implemented as soon as
20 possible.

21 Commissioner Rosenfeld, final comments?

22 ASSOCIATE MEMBER ROSENFELD: Back you
23 up.

24 PRESIDING MEMBER PFANNENSTIEL: With
25 that, we'll be adjourned.

(Whereupon, at 3:32 p.m., the hearing
was adjourned.)

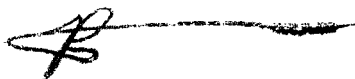
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CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Hearing; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of January, 2008.



PETER PETTY