

DOCKETED

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BEFORE THE
CALIFORNIA ENERGY COMMISSION

In the Matter of:) Docket No. 15-AAER-01
)
Appliance Efficiency Rulemaking)
for Toilets, Urinals, Faucets,)
HVAC Air Filters, Fluorescent)
Dimming Ballasts, and Heat Water)
Pump Water Chilling Packages)
_____)

PUBLIC HEARING ON PROPOSED NEGATIVE DECLARATION AND
EXPRESS TERMS

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

FIRST FLOOR, ART ROSENFELD HEARING ROOM

SACRAMENTO, CALIFORNIA

TUESDAY, MARCH 17, 2015

10:00 A.M.

Reported By:
Julie Link

APPEARANCES

Commissioners Present

Andrew McAllister, Commissioner
Patrick Saxton, Adviser to Andrew McAllister

Staff Present

Harinder Singh, Senior Electrical Engineer, Appliances and Existing Building Office
Ken Rider, Electrical Engineer, Appliances and Existing Building Office
Tuan Ngo, P.E., Appliances and Existing Building Office
Consuelo Martinez, Manager, Appliances and Existing Building Office
Mike Murza, Staff Attorney, Office of the Chief Counsel

Also Present (* Via telephone and/or WebEx)

*Alex Boesenberg, NEMA
Laura Petrillo-Groh, AHRI
Pierre Delforge, Director, NRDC
Gary Fernstrom, PG&E
Charles Kim, Southern California Edison & Statewide IOU Codes & Standards Team
Daniel Young, Statewide IOU Codes & Standards Team
*Ed Thomas, General Electric Lighting
Kevin Messner, PoliticaLogic & Assoc. of Home Appliance Manufacturers
Nate Dewart, Energy Solutions
Eddie Moreno, Sierra Club California
Jerry Desmond, PMI
Fernando Fernandez, PMI
Steve Lehtonen, IAPMO
Danny Gleiberman, Sloan Valve Company
Heidi Hauenstein, Energy Solutions
John Koeller, MaP
*Marianne DiMascio, Appliance Standards Awareness Project
*Matt Sigler, PMI
*John McHugh
* Shabbir Rawalpindiwala, Kohler Company

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1 PROCEEDINGS

2 MARCH 17, 2015

10:00 A.M.

3 MR. SINGH: Good morning, I'm an electrical
4 engineer for the Appliance and Existing Buildings Office.

5 First of all, a few housekeeping items before we
6 begin. For those of you who are not familiar with the
7 building, the closest restrooms are located on the left of
8 as you go out of the door. And there is a snack bar on the
9 second floor under the white awning. That's on the second
10 floor.

11 Lastly, in the event of an emergency and the
12 building is evacuated, please follow our employees to the
13 appropriate exits. We will reconvene at the Roosevelt Park
14 located diagonally across the street from this building.
15 Please proceed calmly and quickly, again following the
16 employees with whom you are meeting, to safely exit the
17 building. Thank you.

18 And with that I will request the Commissioner to
19 make the opening remarks, please.

20 COMMISSIONER MCALLISTER: Thanks, Harinder.
21 I'm Andrew McAllister, the lead Commissioner on Energy
22 Efficiency, which includes the topic before us today.

23 I really want to thank everybody for coming.
24 We've got, I think hopefully, what will be a productive
25 day. A lot of items to -- or a lot of device categories to

1 consider. Hopefully, we can proceed. I know a lot of you
2 will have filed comments around and will after this
3 workshop, likely.

4 So I don't want to hold things up. I know we have
5 a couple of topics, which may take up much of the day, but
6 I want to just iterate that we're in the middle of a
7 drought. We've had a winter that did not live up to
8 expectations. We had a couple of storms come through that I
9 think raised our hopes, but at the end of the day we didn't
10 get as much rain as we needed. Our reservoirs are still low
11 and declining and we're headed into summer, so this will be
12 the fourth year that we've really received much less water
13 than we had hoped.

14 So the water items, in particular, I think are on
15 everyone's mind. At the same time today and tomorrow
16 there's an activity, a set of hearings going on, at the
17 Water Resources Control Board where they're going to make
18 some decisions about whether to recommend more aggressive
19 water conservation measures across the state.

20 And I think we all have the water issue in our
21 state on the top of our minds. It's really one of our
22 highest, if not our highest priority. So I want everyone to
23 kind of keep that in mind, that we need to really think
24 about ways to conserve water responsibly, but conserve as
25 much water as we can going forward. So when we get to those

1 items, you know, keep that in mind by way of context.

2 So I will pass it over to Harinder and staff to
3 continue on, thanks again for coming. I'm looking forward
4 to hear what everybody has to say.

5 MR. SINGH: Thank you, Commissioner.

6 Before we begin I have the agenda slide on the
7 screen, but I would like to mention that comments will be
8 accepted at the end of each presentation. Stakeholders who
9 wish to make comments in person, please fill the blue cards
10 that are available in the front where the sign-in sheet is.

11 Once we finish the blue cards comments will be
12 accepted from the stakeholders that are on the WebEx or on
13 the phone. So once you fill the blue cards, please leave it
14 over with Mike who is sitting next on this desk here.

15 So with that I will move on. So on the agenda
16 part, we have staff presentations. First, we're going to
17 have the Negative Declaration, then we'll move to the HVAC
18 Air Filters, third presentation will be Fluorescent Dimming
19 Ballasts, fourth presentation will be Heat Pump Water
20 Chilling Packages. And in the afternoon we will have
21 Toilets, Urinals and Faucets and federal updates.

22 And after that, you know, as I mentioned we will
23 accept comments after each presentation.

24 With this, I'd like to mention that statutory
25 mandates for the -- I'm just apologizing for the technical

1 difficulty.

2 COMMISSIONER MCALLISTER: Harinder, I neglected to
3 mention, on my right here is Pat Saxton who's my advisor on
4 these issues. So I'll be in and out a little bit today, but
5 Pat'll be here I think for the duration; is that right?
6 Yeah, great. So thanks.

7 MR. SINGH: Yes, sorry for the delay, because of
8 the technical difficulty.

9 With that, California (sic) is the primary energy
10 policy and planning agency and mandates the Commission to
11 reduce the wasteful and inefficient consumption of energy
12 and water in the state. This is accomplished by prescribing
13 standards for minimum levels of operating efficiencies for
14 appliances that consume a significant amount of energy and
15 water statewide.

16 For nearly four decades, appliance standards have
17 shifted the marketplace towards the efficient products and
18 practices, reaping large benefits for California consumers.
19 The state's appliance efficiency regulations saved an
20 estimated 22,923 GWh of electricity and 1,626 million
21 therms of natural gas in 2012 alone, resulting in about
22 \$5.24 billion in savings to California consumers in 2012
23 from these regulations.

24 (Off mic colloquy)

25 With that, I think I'm going to move into the

1 rulemaking activities.

2 We conducted a scoping workshop on August 31st,
3 2011. And then the Commission issued an Order Institution
4 Rulemaking on March 14th, 2012. Staff conducted a workshop
5 May 6th of 2014 and then the Commission issued a
6 Standardized Review Impact Assessment on December 23rd,
7 2014, which was sent to DOF and was published on DOF's
8 website for their review and comments. And then the
9 Commission issued a 45-day Language on February 13, 2015,
10 so we have the comment period for this 45-day language
11 extended to April 15th, 2015. And an adoption hearing will
12 be held on May 13th, 2015.

13 We want to clarify the purpose of the staff
14 workshop -- the public hearing. Staff will clarify the
15 scope of the proposed Negative Declaration and regulations
16 for HVAC Air Filters, Fluorescent Dimming Ballasts, Heat
17 Pump Water Chilling Packages, Toilets, Urinals, Faucets,
18 and Federal Updates to the Regulations. And the purpose is
19 also to allow the Commissioner to receive comments on the
20 proposed Negative Declaration as well as on the
21 regulations.

22 Document availability, proposed Negative
23 Declaration and regulations for HVAC Air Filters,
24 Fluorescent Dimming Ballasts, Heat Pump Water Chilling
25 Packages, Toilets, Urinals, Faucets, and Federal Updates

1 are available on the Energy Commission's website at the
2 address down below:

3 <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?doctetnu>
4 [mber=15-AAER-01](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?doctetnumber=15-AAER-01)

5 Copies of the rulemaking documents can also be
6 obtained by contacting staff and Angelica Romo. Our
7 telephone number is 916-654-4147 and her email is at:
8 Angelica.Romo@energy.ca.gov.

9 The comment period for the regulations for 45-Day
10 Language started on February 13th and will end on April
11 15th. The comment period for Negative Declaration started
12 on February 28th and ends March 30, 2015. That's only for
13 the Negative Declaration; it's a 30-day comment period
14 whereas for 45-Day we have a 60-day comment period.

15 Oral and written comments will also be accepted
16 at the Energy Commission's adoption hearing scheduled for
17 May 13 as well. So if somebody wishes to submit comments
18 after the comment period is over the comments will still be
19 accepted at the adoption hearing.

20 The Negative Declaration part of this is where
21 I'm moving. If you have any questions, please let me know.

22 The proposed Negative Declaration discusses the
23 environmental impacts of adopting the proposed standards
24 for HVAC Air Filters, Fluorescent Dimming Ballasts, Heat
25 Pump Water Chilling Packages, Toilets, Urinals, Faucets,

1 and Federal Updates. The study shows no adverse
2 environmental impacts, so the study is available on our
3 website.

4 And the comment period for the Negative
5 Declaration ends on March 30th. The adoption hearing for
6 the Negative Declaration is scheduled for May 13th, 2015.
7 If you have any comments please bring your blue cards or
8 whoever wants to make a comment on the telephone or WebEx
9 you're welcome to make the comments on Negative
10 Declaration.

11 MR. RIDER: Yeah, I'm just going to go ahead and
12 unmute the lines in case there's someone on the phone that
13 might want to make a comment. Actually, we have a hand
14 raised right now, so I'm going to go ahead and unmute Alex
15 Boesenberg.

16 Hi, Alex. You're unmuted.

17 MR. BOESENBERG: Hi, Ken. Thank you. I wanted to
18 ask if a summary of the discussion of the Dimming Ballast
19 portions can be made publicly available this week?
20 Especially if any changes to the language are to discussed.
21 A lot of us in the lighting industry have to go to an APA
22 meeting in 15 minutes.

23 MR. RIDER: Yeah, Alex. Why don't you give me a
24 call and we can talk about what happened in the workshop. A
25 full transcript will be posted, but I don't think it will

1 be within a week.

2 MR. BOESENBERG: Yeah, I agree they tend to lag. I
3 appreciate that. Thank you, very much.

4 MR. RIDER: Okay. So I don't see any other hands
5 raised, but I'm going to unmute any of the call-in users
6 who may not be able to raise their hands on WebEx. You're
7 unmuted, if you're a call-in user and you haven't logged
8 into WebEx, you may speak now if you have a comment on the
9 Negative Declaration.

10 (No audible responses.)

11 MR. SINGH: Okay, thank you.

12 I'm going to move now to the HVAC Air Filters
13 filter labeling portion of my presentation. So the first
14 slide is about why air filter labeling is required, is
15 necessary for California HVAC systems.

16 Number one, it's to identify appropriate filter
17 for HVAC equipment and system design.

18 It's also to create a database of air filter
19 performance information; balance filter air flow resistance
20 with HVAC equipment size, ductwork and other device losses;
21 increase compliance with Title 24 regulations; level the
22 playing field for comparing air filter models; provide
23 consumers information so they can purchase the appropriate
24 air filter for their HVAC system.

25 So for these reasons we are doing the air filter

1 labeling part, which will be helpful to the consumers as
2 well as provide a greater compliance with the Title 24
3 regulations.

4 Title 24 air filter requirements, number one,
5 efficiency shall be equal to, or greater than, MERV 6. So
6 the Title 24 requires the efficiency of the air filters and
7 the system to be equal to or greater than MERV 6. MERV is
8 Minimum Efficiency Rating Value. And that is as per ASHRAE
9 Standard 52.2 or a particle size efficiency rating equal to
10 or greater than 50 percent in 3.0-10 micrometer range. That
11 is as per AHRI Standard 680. And this requirement is in
12 Section 150.0(m)12B in Title 24.

13 And there is a second requirement in the Title 24
14 Building Standards. There is a requirement for the pressure
15 drop shall conform to the maximum allowable clean-filter
16 pressure drop determined according to Section 50.0(m)12Aii,
17 as rated using AHRI Standard 680, for the applicable design
18 airflow rates for the system air filter devices.

19 So these are the two requirements for the air
20 filters in the Title 24 Building Standards.

21 Now, I move to the staff proposal. The air
22 filters labeling is going to be required for residential
23 buildings that use the forced air heating or cooling
24 equipment. So in the scope, the scope applies only to the
25 residential buildings, not to the commercial. So all the

1 air filters that are going to be used in the residential
2 buildings will be required to place a label.

3 And we have added a number of definitions for the
4 air filters. Number one is air filters, what it means and
5 then air filter media, airflow rate, dust holding capacity,
6 final resistance and then initial resistance, maximum rated
7 airflow rate, minimum efficiency reporting value which is
8 MERV, particle size and particle size efficiency which is
9 PSE.

10 So these are the definitions we have added to the
11 Section 1602(c) of our regulations. These are the proposed
12 definitions for the air filters.

13 And to place the label the air filter needs to be
14 tested. To measure the air filter pressure drop it needs to
15 be tested using AHRI 650-2009 (sic) version. And for air
16 filter size particle efficiency and MERV it's again the
17 AHRI 680-2009 or ASHRAE 52.2-2012.

18 And also to test the dust holding capacity, again
19 these two test procedures AHRI 680-2009 or ASHRAE 52.2-
20 2012, so those are the two test procedures that
21 manufacturers need to use to provide us this information or
22 test of the air filters.

23 And manufacturers are also allowed to test one
24 filter size and use scaling off for other sizes of the same
25 grade. So if a air filter is -- they can test a 16-by-20

1 inch filter or 20-by 20-or whatever size, they just test
2 one filter of the same grade. And they can use the filter
3 to extend the testing to the other sizes.

4 The purpose of this requirement or proposed
5 requirement -- air filters reporting information determined
6 in accordance with AHRI 680-2009 shall be marked with the
7 following information on the filter: particle size
8 efficiency of the unit in three particle size ranges: 0.3-
9 1.0, 1.0-3.0, 3.0-10 micrometers; initial resistance for
10 the range of airflow rates as published by the
11 manufacturer, including the maximum rated airflow rate; the
12 selected airflow rates shall be multiples of 400 cfm. If
13 the maximum rated airflow rate is not a multiple of 400
14 cfm, -- and that cfm is cubic feet per minute -- then the
15 report initial resistance at multiples of 400 cfm, and any
16 fraction thereof, to include the maximum rated airflow
17 rate.

18 I'm sorry, I'll move to the next one. I don't
19 have the full screen, oh maybe it's here. Okay, sorry.
20 Thanks. And any fraction thereafter to include the maximum
21 rated airflow rate; mark the non-reported MERV information
22 field as "not applicable" for this AHRI -- if you are
23 testing with the AHRI Standard 680-2009, because it doesn't
24 have any provisions for the MERV.

25 Air filters for reporting information determined

1 in accordance with the ASHRAE Standard 52.2-2012 shall be
2 marked with the following information: particle size
3 efficiency (PSE) of the unit in three particle size
4 ranges: 0.3-1.0 and 1.0-3.0, 3.0-10 micrometers. Initial
5 resistance for the range of airflow rates as published by
6 the manufacturer, including the maximum rated airflow rate.
7 The airflow rate values shall be 50 percent, 75 percent,
8 100 percent and 125 percent of the test airflow rate value
9 determined in accordance with ASHRAE 52.2-2012. And also
10 number 3 is manufacturers are required to provide a minimum
11 efficiency reporting value, that is MERV.

12 And the last slide is about the consumers and the
13 proposed label requirement. This is what we have proposed
14 in our regulations, in our proposed regulations in Section
15 1607 of the expressed (inaudible). The consumers and
16 retailers can compare an existing filter size with a new
17 replacement filter size. And the Table Z provides the
18 information required on the filter.

19 And the label format is provided above.
20 Manufacturers can print or place a label on a air filter
21 frame or a pleat pack. If packaging obscures the label then
22 also they can print the label on the packaging.

23 The cost and savings analysis for the air filters
24 is as follows. Staff assumes two filter changes per year
25 and an average of 1.25 filters per residential HVAC system.

1 A consumer's annual incremental cost per air filter for
2 labeling is 0.08 cents. And this was calculated through the
3 information provided to us through IOUs case study as
4 manufacturers' information. So we have evaluated all the
5 information and come up with the incremental cost of the
6 0.08 cents for the labeling.

7 And the average energy benefit to a consumer for
8 selecting the appropriate filter for his or her HVAC system
9 is 3.78 kWh and 0.7 therms per year. This equates to \$1.32
10 in annual monetary savings. The net benefit to the whole
11 household is \$1.24 per year.

12 And with that I conclude my presentation. Again,
13 my contact information is here, so you can see it. It's
14 Harinder Singh. My telephone number is (916) 654-4091. My
15 email address is Harinder.Singh@energy.ca.gov.

16 Thank you, very much. And now if you have any
17 questions please bring your blue cards.

18 (Off mic colloquy between Mr. Singh and public)

19 COMMISSIONER MCALLISTER: Yeah, go ahead. That's
20 good, thanks. Welcome.

21 MS. PETRILLO-GROH: All right. Good morning. My
22 name is Laura Petrillo-Groh. I'm the Engineering Manager of
23 Regulatory Affairs at the Air Conditioning, Heating, and
24 Refrigeration Institute. AHRI is a trade association
25 representing over 300 manufacturers of heating and cooling,

1 water heating and commercial refrigeration equipment.

2 While AHRI understands that CEC's labeling
3 objectives are to improve the longevity and energy
4 efficiency performance of HVAC equipment, we are concerned
5 that any mandatory requirement to label air filters would
6 be onerous for manufacturers and not offer any additional
7 benefit to the consumer.

8 The proposed requirement will require
9 manufacturers to produce California-specific packaging,
10 which will increase the cost of manufacturing and lead to
11 challenges managing inventory. The proposal to certify air
12 filter models in the Appliance Efficiency Database is also
13 expected to be burdensome for manufacturers.

14 We ask that CEC allow the manufacturer to
15 disclose the efficiency and pressure drop ratings on their
16 own websites instead in the CEC database and on the
17 packaging. Thank you.

18 COMMISSIONER MCALLISTER: Thanks for being here.
19 So you don't want labeling on the packaging itself?

20 MS. PETRILLO-GROH: No.

21 COMMISSIONER MCALLISTER: I've heard many
22 contractors bend my ear about how problematic it is to not
23 have it there, so I'm very sympathetic to that in that
24 field situation that they're in. So what do you say to
25 that?

1 MS. PETRILLO-GROH: I would say that we all have -
2 - you know, I think the majority of us have access to the
3 Internet and are able to look up websites very easily,
4 especially in the field using smart phones and other
5 technology. And I don't see any reason that having a label
6 on the package would be necessary. I think more for the
7 homeowners or when they're able to a web -- you know, a
8 Home Depot or buy the product online they can see the label
9 on the manufacturer's website.

10 COMMISSIONER MCALLISTER: Great, thanks.

11 MS. PETRILLO-GROH: Thank you.

12 MR. SINGH: Anymore comments from the -- okay,
13 Pierre, please.

14 MR. DELFORGE: Pierre Delforge, NRDC.

15 Commissioner, staff, thank you for the
16 opportunity to comment. We appreciate your work on this
17 issue and we generally strongly support the Commission's
18 proposal.

19 Air filter is an important component of HVAC
20 efficiency. HVAC efficiency represents about 30 percent of
21 residential energy costs and therefore any way to reduce
22 that, especially trying to capture low-hanging fruit from
23 air filter efficiency is very welcome.

24 The problem that we're facing is that current
25 ratings are inconsistent and they don't help facilitate

1 consumer choice, compliance to Title 24, and generally
2 having a healthy market where people can make informed
3 decisions.

4 We think that labeling is a simple and low-cost
5 measure, very low-cost based on what the Commission staff
6 just showed. And that it will enhance the market and
7 consumer choice. While this is a great step forward, we
8 also think there's a missed opportunity by the Commission
9 to align to a single rating; that the current proposal of
10 two different ratings will create confusion in the market
11 and will be more difficult to understand.

12 We strongly recommend that the Commission
13 considers aligning its proposal to a single rating around
14 ASHRAE's MERV rating. This would have no impact on testing,
15 because both test procedures by the ASHRAE and the AHRI
16 test procedure can be converted to a single rating. So we
17 think that this would greatly enhance the effectiveness of
18 the Commission's proposal. And given the simplicity of the
19 change we encourage you to make this change now before
20 adoption.

21 Thank you for considering our comments.

22 MR. SINGH: Thank you.

23 Any more comments? Yes, Gary please.

24 MR. FERNSTROM: Good morning. I'm Gary Fernstrom,
25 representing the Pacific Gas and Electric Company. We'd

1 like to thank everyone involved for their good, hard work
2 on this measure.

3 We feel it's particularly important to have
4 labeling, so that contractors in the field who may be out
5 of cellular range or not have smart phones or be conversant
6 with computers and the Internet, and building inspectors,
7 be able to readily identify the performance of products in
8 the field. Thank you.

9 COMMISSIONER MCALLISTER: Let me ask you about
10 customers actually, because if I'm a customer and I want to
11 replace my filter -- not that straightforward to figure out
12 what exact filter I should be replacing with if it's not
13 right there on the one I'm taking out, right? I mean, how
14 do I know what MERV I'm supposed to have for my replacement
15 if I'm going on the Internet to buy them?

16 MR. FERNSTROM: Well, I honestly believe that
17 consumers probably mostly buy their filters from local
18 brick and mortar outlets. And they probably don't
19 understand the MERV rating and so on. So from the
20 standpoint of compliance assistance, labeling would make it
21 easier for the CEC and others to assure that products sold
22 in stores are compliant with the regulations. And that's
23 the avenue through which we would find the most
24 effectiveness rather than consumers themselves identifying
25 these products. Thank you.

1 MR. RIDER: I'm just going to unmute the phones
2 real quick just in case anyone who's not participating in
3 WebEx has a comment. You have been unmuted. If you have a
4 comment, go ahead and speak.

5 (No audible response.)

6 Okay. Thank you.

7 MR. SINGH: One more thing I wanted to mention at
8 the end of my presentation, was that all those comments
9 that are received will be evaluated at the end of this
10 workshop and also from the transcripts. And we will make
11 recommendation to the Commission for the next steps. And
12 the comments will be responded to in the Final Statement of
13 Reasons when we submit in writing after the adoption.

14 So if the Commission decides to make changes to
15 the regulations, proposed regulations, then we will issue a
16 15-day language or additional language with the additional
17 comment period. So this is the right moment to mention it
18 to you. Thank you.

19 Ken, you're next. Thank you.

20 MR. RIDER: Good morning, everyone. My name is Ken
21 Rider. I'm an Electrical Engineer with the Appliance
22 Efficiency Program at the Energy Commission. I'm here to
23 present on our proposal for new regulations for deep-
24 dimming fluorescent ballasts and also for heat pump water
25 chilling packages.

1 My contact information is on this slide.

2 So what is a dimming ballast and what is a deep-
3 dimming ballast? So a dimming ballast is a product that's
4 used to dim a fluorescent lamp. And a deep-dimming ballast
5 is one that dim that lamp below 50 percent.

6 The U.S. Department of Energy regulates non-
7 dimming ballasts and also dimming ballasts that can dim not
8 below 50 percent.

9 The type of dimming in these ballasts can vary.
10 Some dim continuously, some have dimming in discrete steps.
11 And also some don't dim at all, they actually just switch
12 on or off a sequence of lights.

13 Also these dimming ballasts are controlled by a
14 variety of different kinds of control systems. The three
15 most common are low voltage DC, phase chopping, and digital
16 controls.

17 In the past, these dimming ballasts have been
18 fairly rare in commercial buildings with very low numbers
19 of shipments. However, the California Title 24 Building
20 Efficiency Code is causing a market shift towards a greater
21 number of these dimming ballasts.

22 Dimming ballasts are a great energy savings
23 opportunity, because they allow for light tuning, which is
24 where you can specify an amount of lumens in an area or
25 space and hit exactly that target and reduce the amount of

1 light output. Also, you can adjust for daylighting at
2 different periods of the day and save energy. And you can
3 also dim in various occupancy scenarios.

4 However, dimming ballasts also can represent
5 potential energy consumption increase from the addition of
6 control systems and if they are less efficient than fixed-
7 output ballasts then they can consume a bit more.

8 This is just showing the Title 24 Regulation. As
9 you can see in the slide it shows that the dimming ballasts
10 that are used to comply with Title 24 are required to dim
11 below 50 percent, which meets that definition of a
12 deep-dimming ballast.

13 So to investigate efficiency opportunities for
14 these products, the IOUs tested about 39 of them, 32 TA
15 ballasts and 75 ballasts and submitted the test results to
16 the Energy Commission. The tests were conducted across the
17 entire dimming range in 5 percent increments, 5-10-15 all
18 the way up to 100.

19 The data showed a significant amount of variation
20 in efficiency and a number of savings opportunities. In
21 fact, some of the dimming ballasts are as much as 10
22 percent less efficient than the fixed output ballasts
23 requirements by DOE.

24 Here's a graph of the data submitted on two of
25 the different products -- deep-dimming ballasts, these are

1 T8 deep-dimming ballasts. The red is Product A, the green
2 is Product B. And if you look here on the x-axis it looks
3 like it got chopped off, but on the x-axis are the output
4 watts to the lamp. And on the y-axis are the input watts to
5 the ballast.

6 And you can see here that the green product uses
7 significantly lower amounts of input for the same level of
8 output. And you can also see it implements a feature here
9 where it cuts the cathode heating representing even greater
10 distance and savings between this Product A, so there's
11 definitely room for improvement. There's several watts,
12 almost 10 watts at least right here, difference in the
13 input power to get the same amount of light output from the
14 fluorescent, attached fluorescent lamps.

15 This is a graph of the standby energy consumption
16 or power consumption of various products that were tested
17 and submitted by the IOUs. The dots on this represent the
18 various control systems I mentioned earlier. LVDC stands
19 for Low Voltage DC control. The red dots are probably the
20 most interesting, they're the digital controls. They're the
21 ones that use the most amount of power in standby. And you
22 can see that there's quite a bit of variance here in the
23 amount of standby power that they draw.

24 The Commission is proposing to set a standard at
25 one watt or less, which is around here. Which several

1 digital control ballasts already meet, but where there's
2 still quite a bit of energy savings opportunity for the
3 remaining controls.

4 This is a graph of the Weighted BLE requirements
5 that the Energy Commission is proposing. The red dots
6 represent the proposed levels and products that fall -- the
7 products are the blue dots and the ones that fall above the
8 red curve would comply with the proposed regulations. On
9 the x-axis there's the max output power, the max arc power.
10 And on the y-axis is the weighted BLE value.

11 The size of the blue dots represents the cost of
12 the ballast. And what this graph demonstrates is that there
13 isn't a particularly strong trend between being more
14 expensive or cheaper and being more efficient. So in other
15 words, the products that comply are not really much more
16 expensive than the products that do not comply today.

17 So the opportunities in these ballasts are
18 improved BLE, which is the Ballast Luminous Efficiency,
19 which is basically the efficiency of converting input power
20 to arc power.

21 Cathode cut-out, there's a heater in these lamps
22 to ensure operation at dim states. These add a little bit
23 of extra heat to make sure that the ballast doesn't flicker
24 or cut out. But at full output the power of the lamp
25 itself, generates enough heat to keep the lamp operational,

1 so then that extra heater can be shut off. And so that's an
2 opportunity.

3 Also, lower standby power, sleep modes in
4 digitally-controlled ballasts and better software protocols
5 in the digital controls.

6 To arrive at the proposed regulations the Energy
7 Commission's considered many regulatory approaches. One was
8 to just extend the DOE's fixed output standards to these
9 dimming ballasts.

10 We also looked at the IOU original proposal,
11 which was to set standards at each of three different light
12 output levels.

13 We also looked at a design standard that would
14 just require a cathode cut-out. That's that heater feature
15 I mentioned.

16 We also looked at an annual energy use
17 performance standard that would aggregate all three
18 measurements into a single metric, but ultimately we
19 decided on a weighted BLE standard, which takes the
20 measurement of BLE at 100, 80 and 50 percent. And then
21 takes a weighted average based on usage.

22 We also are proposing a maximum standby power and
23 a minimum power factor.

24 Also products that are sold in the state, we'd
25 need to certify their compliance with the California Energy

1 Commission.

2 So I just want to walk a little bit more
3 precisely through the language of the proposal. In Section
4 1602(j) that's where the product definitions are located in
5 the express terms. We've added definitions for arc power,
6 which is the output power to the lamp. We've added
7 definitions for deep-dimming fluorescent ballasts, for
8 input power, maximum arc power, weighted ballast luminous
9 efficacy. And the definition for a deep-dimming ballast is
10 essentially, as I mentioned in the first slide, one that
11 can dim below 50 percent output.

12 The proposed test methodology relies on the DOE
13 test procedure for fixed output lamps and it's located in
14 10 C.F.R. 430.23(q).

15 In addition, staff is proposing and the
16 Commission is proposing in its expressed terms, some
17 modifications to that test procedure such as selection
18 rules for which lighting control to use during testing. And
19 the methodology for measuring the additional dim states
20 beyond the 100 percent state that the DOE test procedure
21 currently measures. And it also defines a point to measure
22 power factor.

23 So the language regarding controls that the
24 Commission is proposing is essentially in order of
25 preference for a laboratory to select a control for the

1 ballast testing.

2 The first preference or the highest preference,
3 is a lighting control from the same manufacturer as the
4 ballast. For example, if Lutron makes the ballast the lab
5 should prefer to find a Lutron lighting control that's
6 compatible with that ballast.

7 The second best is if the manufacturer recommends
8 a lighting control, then the lab will use that. And then if
9 neither of those first two conditions are met then the lab
10 technician should select an appropriate control.

11 In addition, the control with the minimum amount
12 of additional functionality beyond what the lamp ballast of
13 capable of doing shall be selected. So there's no need to
14 buy a control that has extra bells and whistles that aren't
15 compatible with the ballast.

16 In addition, the test procedure is being expanded
17 to test at various dim states using essentially the same
18 methodology as what is required for the full output state.
19 In addition, we're proposing to have measurements at the 80
20 percent and 50 percent output states.

21 And we're also proposing a tolerance for dimming
22 ballasts such as steps dimming ballasts that don't hit
23 precisely 80 percent or 50 percent. For example, if a step
24 dimming ballast can only step to 70 percent and not 80
25 percent that would be where we would measure it for the

1 proposed regulations.

2 In addition, staff is proposing some changes to
3 the standby mode measurement. We are proposing that a 90-
4 minute waiting period be conducted before measuring the
5 standby mode to allow for sleep states. We also describe
6 the control setting that is consistent with standby mode,
7 which is a control setting that would set the lay output to
8 zero. And we also provide a sampling rate and an average of
9 a period of a test procedure sampling rates to come up with
10 the average standby mode.

11 In Section 1604 there's also a calculation and
12 weighting table for calculating the weighted BLE, Ballast
13 Luminous Efficacy. That is calculated by multiplying the
14 BLE test as measured at 100 percent output, 80 percent
15 output and 50 percent output and then weighting it
16 according to this table. So you can see that 80 percent
17 output is the highest weighted measurement at 50 percent.
18 And the full output is weighted at 20 percent and the 50
19 percent output is weighted at 30 percent.

20 This equation has P times W. The Ps here stand
21 for the BLE measurements at 100 percent, 80 percent and 50.
22 And W are the weightings located in this table here.

23 There are three proposed requirements for deep-
24 dimming ballasts and they're located in Section 1605.3(j)
25 of the proposed regulations.

1 The first is that a deep-dimming ballast shall
2 not consume more than 1 watt in standby mode. The second is
3 that it shall have a power factor of 0.9 or greater. And
4 the third is that it shall have a weighted ballast luminous
5 efficacy greater than or equal to this equation, which
6 scales to the output power such that lower output power
7 deep-dimming ballasts can be a little bit less efficient
8 than higher maximum arc power ballasts.

9 In addition, as I mentioned earlier,
10 manufacturers would need to certify their deep-dimming
11 ballasts with the Energy Commission. The data that would be
12 required to be submitted to the Energy Commission is
13 located in 1606 of express terms.

14 On a slide there are a few examples of the type
15 of data that we would collect. They include some basic
16 ballast information such as voltage and the number of lamps
17 it can power. As well as information that can be derived
18 from the test procedures such as the BLE levels measured at
19 80, 100 and 50 percent and power factor and other things.

20 So as I mentioned earlier, the cost -- when staff
21 looked into costs from the tested ballasts there was no
22 clear correlation between cost and efficiency in the
23 products that we found.

24 In addition, we looked at other work done on
25 dimming ballasts efficiency and found some incremental

1 costs in the DOE's analysis of improving fixed output
2 ballasts. And the Commission staff used those incremental
3 costs, which were characterized as improving the efficiency
4 of the ballast for the incremental costs of the proposal
5 with a 10 percent -- or it's not a 10 percent -- 10 cent
6 incremental costs per additional number of lamps that the
7 ballast is capable of operating. So one lamp ballast, we
8 estimated the incremental cost to be 79 cents, and then
9 scaling up to a four-lamp ballast, which we estimated the
10 incremental cost to be \$1.09.

11 We also analyzed the energy savings per unit and
12 the lifetime dollar savings. Deep-dimming ballasts have a
13 fairly long life. We estimate it to be 13 years. The
14 lifetime savings are significantly greater than the
15 incremental cost estimates. For example, the one lamp
16 ballast is estimated to save a lifetime dollar amount of
17 \$8.71. That's compared to less than an 80 cent incremental
18 cost, so it is highly cost effective.

19 The proposal also would save a fairly significant
20 amount of energy statewide. We estimate that the savings in
21 the year 2029 would reach 388 GWh/yr. And every year's
22 worth of shipments would save about 20.4 GWh/yr.

23 So with that, I think I will actually pause for
24 comments on dimming ballasts.

25 Do we have any blue cards on that, let's see?

1 MR. NGO: No.

2 MR. RIDER: No? While Tuan checks, anybody in the
3 room with a comment? Yes, please approach and please
4 remember to state your name and affiliation for the record
5 as well.

6 MR. KIM: Thank you, very much for allowing me to
7 make a comment. My name is Charles Kim, I'm with the
8 Southern California Edison Company. But I'm speaking on
9 behalf of the Statewide IOU Codes and Standards Team that
10 includes PG&E, San Diego Gas and Electric, Southern Cal Gas
11 and Southern California Edison Company.

12 First of all, I thank the Commissioner and the
13 staff for working with us since the year 2011 on this
14 particular measure and especially through the California
15 Energy Commission. We have been known to lead energy
16 efficiency that not just protects our environment, but also
17 wisely allocates our natural resources for this generation
18 and also for the future generation as well. And CECs
19 leadership clearly demonstrates on this particular measure
20 as well by requiring codes that regulate dimming ballasts.

21 We are very pleased to see this particular
22 measure moving forward and we have a few comments and
23 recommendations to refine the code languages. I'm here with
24 my consultant, Daniel Young. We're going to make specific
25 recommendations on the code language and we will send out

1 comments in a written form and will be docketed.

2 MR. RIDER: Thank you, Charles.

3 MR. KIM: Once again, thank you very much for
4 leading California. Thank you.

5 MR. YOUNG: All right, thanks for the introduction
6 Charles. So again, just a few comments here on behalf of
7 the California Statewide IOU Codes and Standards Team.

8 So first of all, as Charles said, we strongly
9 support the efficiency standards for dimming ballasts being
10 proposed by the Energy Commission. Specifically, we
11 strongly support the adoption of the weighted BLE metric,
12 which is based on ballast performance at 100 percent, 80
13 percent and 50 percent of full output.

14 Accordingly, we support the standard levels
15 proposed for active mode efficiency based on a minimum
16 weighted BLE as a function of full output arc power. And
17 additionally, we support the proposed definitions and test
18 procedures that apply to the weighted BLE test and
19 measurement.

20 We have a couple of other comments here that we'd
21 like to make for the record. First, regarding standby mode
22 power draw. So as mentioned in comments submitted by the
23 IOUs to the docket we believe that .05 watts is a more
24 appropriate level at which to cap the standby mode energy
25 use. So we know that it's technically feasible for dimming

1 ballasts and we can also point to examples of many other
2 complex -- more complex devices I should say -- such as TVs
3 and cell phones that are able to confine standby mode power
4 to less than .05 watts, which proves that with the
5 appropriate drivers dimming ballasts can reach that level
6 as well.

7 Just to clarify, this was really only applied to
8 the ballast itself and not any type of wireless control
9 modules or anything like that, that you would attach
10 separately through a third party that isn't integral to the
11 ballast. So we're only talking about the ballast standby
12 mode.

13 Moving on, we have a comment on power factor, so
14 we support the CEC proposal to regular a power factor at
15 0.9 when the ballast is on at full output. However, we
16 believe that we should extend that requirement to the 80
17 percent and 50 percent of full output active mode points as
18 well.

19 So duty cycle assumptions used to calculate
20 weighted BLE actually indicate that ballast will be
21 operated at a combined 80 percent of the time at either 80
22 percent or 50 percent of full output, so it is actually
23 crucial to ensure that power factor is maintained at those
24 test points as well.

25 So there's recent research into the power factor

1 of power supplies that actually suggests that in order to
2 maintain higher efficiencies when operating at reduced load
3 there have been some examples where power supplies actually
4 shut off their power factor correction, which indicates
5 that you can sometimes make a tradeoff here between power
6 factor correction and efficiency at part load for products
7 that aren't being properly designed to maintain high power
8 factor throughout all operating ranges.

9 So in other industries as well, we've seen power
10 factor corrections slip when it goes unregulated. So a
11 perfect example of that, I think, is in the CFL industry
12 where at first there are many products at .9 power factor,
13 but once ENERGY STAR came out with a specification at .5
14 then we saw basically the whole market shift down to meet
15 that specification. So we don't want to see that here.

16 And I think what really we want to stress is that
17 we tested a bunch of products here and every single one of
18 them would have passed this proposed measure of .9 power
19 factor at 100 percent, 80 percent and 50 percent. And so
20 there's a very minimal impact here in terms of the existing
21 market. And we just want to ensure that we're maintaining
22 that performance for future product cycles as well.

23 That's all, thanks.

24 MR. SAXTON: Can I ask you a clarifying question?
25 Do you mean of all the tested products all of them met the

1 power factor across the ranges or the subset of products
2 that met the power factor at 100 percent also met it at the
3 dimming ranges?

4 MR. YOUNG: I'll have to double check, but I
5 believe it's all of the products we tested passed.

6 MR. SAXTON: 100 percent of the tested products
7 passed, okay. Thank you.

8 MR. RIDER: Yeah, Pat just to clarify, all the
9 testing we received all had a 0.9 power factor or greater
10 at 100 percent output.

11 MR. SAXTON: Okay, thanks.

12 MR. YOUNG: Thank you.

13 MR. RIDER: I had a raised hand. I still do, okay.
14 Oh, we have a -- in the room? Yes, please Pierre?

15 MR. DELFORGE: Pierre Delforge, NRDC. Again, I
16 would like to thank the Commission's leadership and
17 proactive work on this. I know that dimming ballasts are
18 not yet a significant share of the market, but with Title
19 24, which went into effect last year, they expect it to
20 become a large share of the market. And therefore I think
21 it's the right time to address this issue.

22 We generally strongly support the Commission's
23 proposal, particularly on the weighted BLE, the test
24 procedure, the metric, the levels. I'd like to focus on my
25 comments on two points.

1 First, on the standby like Daniel mentioned early
2 on, low standby, the 1 watt, you know, around .1 or .2, so
3 a tenth of 1 watt is feasible today with network
4 connectivity. And we still have many other products. I
5 realize that none of the test data sets that the IOUs
6 provided met these levels for digital ballasts and
7 therefore it was challenging to set that base on this data
8 set.

9 But, you know, there is technology widely
10 available in other products that meets these levels. So 1
11 watt may not seem like much, but 24/7 it adds up and when
12 you -- especially in commercial settings where you get
13 hundreds of ballasts.

14 And if you extend it across all products we are
15 seeing an increasing proliferation of products that have 1
16 watt or more standby in the home and in offices. And we
17 can't use that as an excuse that, because there are many
18 other products that have high standby it's okay to go with
19 this one. I think we need to make an effort on every single
20 product to address the issue of standby and while we think
21 this is a good step forward we encourage the Commission to
22 consider either an additional making -- or in the future to
23 strengthen this requirement.

24 On the power factor I would like reinforce
25 Daniel's comment on the risk of a loophole around not

1 having power factor requirements below 100 percent. As
2 Daniel mentioned, we have seen products -- and we will put
3 this on the record in our written comments -- but there is
4 a study available that shows that some power supplies
5 actually shut off power correction in order to be able to
6 meet efficiency requirements. So because power factor makes
7 efficiency sometimes more difficult to achieve, in order to
8 meet the requirements at a lower load, they shut off power
9 factor correction and end up with a very low .4, .5 power
10 factor. Which has a significant impact overall, especially
11 in commercial offices.

12 And this could be a significant loophole and
13 reduce the effectiveness of the Commission's requirements.
14 So we strongly encourage you to include reasonable power
15 factor after requirement at all ranges, so that we don't
16 want to see a degradation of the efficiency requirements.

17 Just to close, I think this rulemaking and these
18 standards have a significant energy saving potential for
19 California with nearly 400 GWh/yr. So we strongly support
20 it and encourage you to move forward. Thank you.

21 MR. SAXTON: Thank you.

22 MR. RIDER: Gary?

23 MR. FERNSTROM: I'm Gary Fernstrom, representing
24 the Pacific Gas and Electric Company.

25 While Charles and Daniel made excellent comments

1 on behalf of all of all of our utilities I'd like to make a
2 comment specifically on PG&E's behalf. And that would be
3 while we have collectively recommended a little tighter
4 standards in a couple of areas we want to recognize the
5 excellent work that staff did in their approach to this
6 opportunity in general. Excuse me, it's very complicated
7 and I believe your staff really nailed it.

8 Furthermore, California addressing dimming
9 ballasts again demonstrates California's leadership in
10 addressing these opportunities before the federal
11 government. Thank you.

12 MR. RIDER: Thanks, Gary.

13 Anyone else in the room? Okay, I do have a hand
14 raise. I've got Ed Thomas. I'm going to unmute you, Ed.
15 You're unmuted, if you still want to --

16 MR. THOMAS: Good morning. I'm Ed Thomas from
17 General Electric Lighting. First, I'd to thank the
18 Commissioner for the opportunity to participate in this
19 Webinar and understand the actions that are proceeding
20 here.

21 I would like to make two comments. The first one
22 regards one of the plots that were shown a little bit
23 earlier, where there was a ballast input that related with
24 a green and red plot showing the cathode cut-out
25 characteristics. Yeah, that's it there.

1 And I'd just like to remind the Commission that
2 there is intellectual property wrapped around the cathode
3 cut-out technology. And by mandating such an action there
4 may be issues within different companies about how to best
5 accomplish this methodology. So again, I just wanted to
6 remind about the IP issues that are embedded with the
7 cathode cut-out technology.

8 The second comment I'd like to make regards the
9 BLE measurement at 50 and 80 percent of light output. There
10 is a considerable fixture in capacitor effects that occur
11 with multi-lamp fluorescent ballasts during deep-dim,
12 because typically in most cases dim is accomplished by
13 raising the frequency. And that makes any wiring effects if
14 the contractor was not so neat with their wiring techniques
15 and placement. The ballasts are sensitive to this type of
16 effect and may cause reading errors or measurement errors
17 when tested.

18 The other aspect of that is I see where 30-some
19 ballasts for T8 and several T5 ballasts were tested at a
20 test facility. I'm wondering if these same ballasts were
21 tested at any other facilities and if the data was able to
22 be correlated from one facility to the next? This would
23 take into account differences, possibly in the measuring
24 equipment. Differences in the physical set up of the test
25 and both of which would contribute to some variation of the

1 test results.

2 So these are the comments and my concerns as a
3 manufacturer of ballasts for deep-dimming applications.
4 Thank you, very much for your time.

5 MR. RIDER: Thank you, Ed. And also if you have
6 any suggestions as to how to improve the testing
7 methodology to help avoid inconsistencies we'd love to hear
8 those as well.

9 MR. THOMAS: Thank you.

10 MR. RIDER: I didn't personally oversee the
11 testing myself, but Dan or anyone in the audience, would
12 you like to respond to the questions? If not, I'll move it
13 on to the next comment.

14 MR. SAXTON: Well, Ken let me ask you on Ed's
15 first question about the cathode cut-off, we don't have a
16 prescriptive proposal for that or have got a performance
17 standard. So that might be one way that someone would
18 achieve the weighted BLE efficiency.

19 MR. RIDER: Yeah, that's correct. We looked at
20 perhaps -- we considered and looked at requiring cut-out,
21 but in the actual proposal we don't prescriptively require
22 it and manufacturers don't have to use it. But they
23 certainly can if it would help?

24 MR. SAXTON: Sure.

25 MR. RIDER: Yeah, Dan?

1 MR. YOUNG: So this is Daniel Young representing
2 the California Investor Owned Utilities Team. I can respond
3 to a couple of the points here, so with regard to the
4 testing. So that's a concern that was raised early on by me
5 and other folks. And we did have calls with them and their
6 engineers to discuss the equipment needs and the test
7 method specifications that would allow for measurements to
8 be repeatable.

9 And then we all kind of did agree that once you
10 got to the very, very deep-dimming areas below say 15
11 percent or so, there would be a lot more difficulty in
12 obtaining accurate and repeatable measurements. But at 50
13 percent and above, it was our understanding that NEMA was
14 comfortable with those measurements. And they being the
15 ones with the initial concern.

16 So we also did some round robin testing of some
17 ballasts, obviously not all of them, and were able to
18 corroborate some of those test results. So it's not all
19 just coming from one lab although we presented the set of
20 data just from one lab.

21 And with regard to the issue of IP for the
22 cathode cut-out technology, so that's also something that
23 we recognized was an issue from previous comments from
24 industry as well. And I guess I would just reiterate that
25 there's no requirement being proposed for cathode cut-out.

1 There are only performance requirements at 100 percent, 80
2 percent and 50 percent. None of which requires any sort of
3 technology to be used one way or the other.

4 Further, in the NEMA LL9 guidance document that
5 defines basically how much cathode heating should be used
6 in doing ballasts we -- in previous comments have gone to
7 the effort to quantify the level of improvement that's just
8 defined within the LL9 itself. So that again, not looking
9 at any specific cathode heating technologies or approaches,
10 but just understanding that there's a lot of room there
11 inherently for improving that type of performance.

12 MR. RIDER: And if I recall correctly, Dan, from
13 the data almost, if not all the manufacturers that were
14 tested had at least one ballast of some kind that had
15 cathode cut-out.

16 MR. YOUNG: I believe so.

17 MR. RIDER: Of one form or another.

18 MR. YOUNG: Yeah, I believe so. And again, we
19 don't know for sure, but just looking at the shapes of the
20 carriers that we tested --

21 MR. RIDER: Would suggest that?

22 MR. YOUNG: Right, correct.

23 MR. RIDER: Okay, thank you.

24 And then Ed, I see your hand's raised again. I'm
25 going to go ahead and unmute you. Did you have some

1 additional comments?

2 MS. THOMAS: Oh, no. I'm sorry. I appreciate the
3 comments and the replies from the staff. I just need to
4 push my "lower hand" button there.

5 MR. RIDER: Okay, sorry.

6 MS. THOMAS: Thank you, very much.

7 MR. RIDER: I just wanted to make sure.

8 MR. SAXTON: Ken, I have one more question. You
9 said the test procedure is being adapted from a fixed
10 ballast test procedure. So it's likely that the
11 configuration does not address separation of control wiring
12 from the AC wiring?

13 MR. RIDER: Yeah, it doesn't really discuss a lot
14 about control wiring, because they're -- it's just a
15 switch. I mean, there's no --

16 MR. SAXTON: Right, okay.

17 MR. RIDER: And we did add some things to address
18 controls as I mentioned and we'd love to hear more, if
19 there is an issue, how to address that and what that issue
20 would be. But this is the first time I've particularly
21 heard of this and so I look forward to seeing the comment
22 and we'll try to address that as appropriate.

23 MR. SAXTON: Yeah. So, Mr. Thomas that might be
24 something that would be particularly helpful in your
25 comments to address.

1 MR. RIDER: Okay. I'm going to go ahead and move
2 on to the next topic, which is "Heat Pump Water Chilling
3 Packages."

4 If you're just joining this Ken Rider, I'm with
5 the Appliance Efficiency Program at the Energy Commission
6 and the lead for this product.

7 The Commission is proposing a test and list
8 requirement for heat pump water chilling packages.
9 Builders, designers, inspectors in the state require
10 repeatable and reliable information about product
11 performance in order to meet energy and design goals in
12 buildings.

13 And heat pump water chilling packages currently
14 do not have readily available performance data, and in
15 particular verifiable performance data. The Energy
16 Commission's building regulations added testing and
17 verification for these products in Table 110.2-D and
18 certification through the buildings program.

19 However, the Energy Commission staff proposes to
20 move these requirements into the Title 20 appliance
21 standards, requiring all equipment -- heat pump water
22 chilling packages -- be certified to the more robust
23 appliance efficiency database before being sold, offered
24 for sale, or installed after July 1. And that would affect
25 equipment manufactured on or after July 1, 2016.

1 The scope of the regulation is the same as the
2 scope of the test procedure.

3 The staff is proposing to use AHRI 550-590 2011
4 for equipment testing. And in the express terms those
5 proposed test procedures are located in Section 1604(c)(5).

6 And all the equipment currently covered in again,
7 the Title 24 Regulation in Table 110.2-D, we propose to
8 cover in this appliance efficiency standard.

9 And I put the definition on a slide. And this is
10 taken essentially directly from the test procedure about
11 what a heat pump water chilling package is.

12 So again, to meet this regulation manufacturers
13 would simply need a test and provide the data. There's no
14 particular performance level that they need to meet. The
15 data submission requirements are located in Section 1606 of
16 the express terms. And it's actually on page 38 of the
17 express terms.

18 Some examples of the information collected there
19 are heating and cooling capacity, energy efficiency ratio,
20 the COP, the coefficient of performance and a few other
21 important bits of information.

22 If you have any questions, I'm the lead again,
23 for this product. Here's my email address and phone number
24 and where to submit comments.

25 I'm going to go ahead and take comments in this

1 room regarding this product; anybody in the room?

2 MS. PETRILLO-GROH: Good morning. This is Laura
3 Petrillo-Groh from AHRI.

4 I think these reporting requirements for this
5 equipment is a bit premature. There is a proposal under
6 development through ASHRAE 90.1 for these products. We'd
7 like to wait for that process to fully complete before
8 moving into such specific reporting requirements for each
9 individual state.

10 MR. RIDER: So quick question, so this whole topic
11 arose from builders trying to get essentially verification
12 and credit for installing these highly efficient systems.
13 And, you know, the Energy Commission and the Title 24
14 Program and the Title 20 -- and we didn't have any
15 certified test data. So are you suggesting that the
16 builders continue to not have a data set or what are you
17 proposing for the interim period between now and when this
18 new test procedure is ready?

19 MR. SAXTON: Ken, let me maybe add a little bit to
20 that. So I think the genesis of this proposal was actually
21 again from a couple of contractors who have intended to
22 install this type of equipment under our building standards
23 requirements. And actually run into problems with their
24 local jurisdictions for not being able to state valid
25 efficiency numbers. And then also people who use what we

1 call the performance method, essentially a software
2 simulation, to determine equivalent energy budgets have run
3 into complications there as well.

4 And so this was actually intended to be a market
5 enabler. I understand the question of certification from
6 the industry side, but this is really intended to enable a
7 broader market for these products.

8 MR. RIDER: Yeah, and I think also when this new
9 test procedure is done we would love to take a look at it
10 and update to make sure -- we don't want to be
11 inconsistent, necessarily, with industry practice.

12 MS. PETRILLO-GROH: Sure, I think it's not
13 necessarily a test procedure. I think it's more -- and the
14 proposal is still under development, so I don't have
15 actually any of the details. Please forgive me. But it's
16 more for making sure that these products are going to meet
17 energy efficiency requirements for new buildings. So I
18 would wait to see what happens with ASHRAE 90.1 rather than
19 having the difficulty of maybe having to backtrack on some
20 of the report or requirements and aligning those at a later
21 date.

22 MR. RIDER: We would appreciate any more detail
23 about how this -- you know, some of those potential
24 difficulties in written comment.

25 MS. PETRILLO-GROH: Yeah, I would be happy to

1 follow up with that in written comment. Thank you, very
2 much.

3 MR. RIDER: Thanks.

4 Anybody else in the room? Okay. I don't see any
5 hands raised on the -- I'm going to unmute some of the
6 call-in users just in case they have a comment on this
7 issue. If you're a call-in user your phone has been
8 unmuted. Go ahead and speak if you have a desire to comment
9 on heat pump water chilling packages.

10 (No audible response.)

11 Okay. All right, well thank you everyone and I
12 look forward to seeing your written comments. And I believe
13 that puts us at lunch break, or no? Okay.

14 MR. SINGH: Thank you, again. Since we have some
15 time left I would like to move to the Federal Updates
16 portion of our presentation, because as we have scheduled
17 for the water topics we're going to move on to water topics
18 after lunch.

19 So if there are any comments related to the
20 federal updates I'd like to receive the comments. There is
21 not any presentation on that, because it's basically we are
22 doing from last year. June was our cutoff date and whatever
23 was from the previous to June of 2014 we updated the
24 federal regulations into our federal updates portion. And
25 we will continue to do that in the next one, but in the

1 meantime since it's a change without any regulatory effect.
2 So if there are some regulations that came afterwards and
3 aren't effective somewhere in 2015 or the end of 2015 or
4 early 2016 we would like to hear it and see if we can do
5 something about it.

6 So with that, if there are any comments we'd like
7 to receive those comments, please.

8 MR. MESSNER: Thank you. This is Kevin Messner,
9 I'm with PoliticalLogic. I represent the Association of Home
10 Appliance Manufacturers.

11 We submitted comments, let's see how many pages,
12 seven pages of corrections. They're all technical
13 corrections just to get updated with the DOE I hope we can
14 put in there.

15 We met with Commissioner McAllister almost a year
16 ago on some of these and they've changed since then. And we
17 thought we were going to get in the last group, but weren't
18 able to because of timing I understand. But now we're in
19 the second group and we're a year later, so it'd be helpful
20 to get these in. I hope you look positively on it. We're,
21 as we all know, trying to certify our members or trying to
22 certify and there's just inconsistencies on test procedures
23 and appendix. It should be noncontroversial.

24 If you have any questions on them I'll be happy
25 to answer them. We can get engineers on the phone and go

1 through it or whatever needs to be done, but it would be
2 great to get everything clarified. So I don't know if you
3 have comments or have any chance of some positive, warm
4 fuzzies to make me feel good that these will get in.

5 MR. SINGH: Yes, thank you Kevin we have looked at
6 your comments and we are working on it. And, you know,
7 hopefully we will have something maybe. If the Commissioner
8 today for 15-Day Language then we might include those in
9 the federal updates language.

10 MR. MESSNER: Okay.

11 MR. SINGH: But we are looking at it and Legal is
12 working with us on that, you know?

13 MR. MESSNER: Okay. Thank you.

14 MR. SINGH: And so we are aware of that. And we
15 thank you for your early comments, which is always helpful,
16 because if it's at the end of the comment period then it's
17 always hard to work on those things. So we want to thank
18 you for sending all the comments and appreciate your coming
19 in and commenting -- making your comments here in person.
20 Thank you.

21 MR. MESSNER: Okay. Thank you, Harinder. And like
22 I say any questions you have, please feel free. Just one
23 last point is we tried to frame it too -- in that a lot of
24 these things if you would just reference the DOE regs then
25 we wouldn't have to necessarily go through that either,

1 because they're changing as well. And we're always getting
2 interpretations, so that's another larger issue too. But
3 that would be great as well, but thank you. And we'll look
4 forward to the 15-Day Language, maybe.

5 MR. SINGH: Thank you.

6 MR. SAXTON: All right. Thanks, Kevin.

7 Just a second, Mike, there's a reason why we
8 don't just reference the DOE regs isn't there? I thought
9 that there we have a legal explanation for why we do that?

10 MR. MURZA: I believe so, but I'm not currently
11 familiar with that exact reason.

12 MR. SAXTON: Okay, thanks.

13 I think it has to do with the fact that we
14 actually do have a state regulation that mirrors the
15 federal regulation. It's the federal regulation, of course,
16 that's in effect.

17 MR. MESSNER: Right, and you guys do reference the
18 federal regulations. It's just when you do, you kind of
19 halfway do it. You're almost pregnant, I guess, which is
20 not possible. But you put an explanation and then you cite
21 the DOE federal regulations, but the explanation isn't
22 consistent with the regulations. So if you just cite the
23 regulations and leave out as many words to try to explain
24 it, it'd be better.

25 MR. SAXTON: All right, well we'll definitely meet

1 again internally and maybe there's a follow-up, because as
2 you said it's a constantly moving target. The intent is
3 certainly to remain consistent.

4 MR. MESSNER: Right, perfect.

5 MR. SAXTON: So okay maybe there's better
6 approach.

7 MR. MESSNER: Okay. Thank you.

8 MR. SINGH: Nate?

9 MR. DEWART: Thank you, Harinder. This is
10 Nate Dewart from Energy Solutions on behalf of the
11 California Investor Owned Utilities.

12 Just to share the sentiment of we've reviewed the
13 45-day language for the federal alignment and are fairly
14 supportive of that process and will be submitting comments
15 in writing. Thanks.

16 MR. SAXTON: Thanks.

17 MR. SINGH: Thank you.

18 MS. PETRILLO-GROH: Laura Petrillo-Groh from AHRI.
19 There are two requirements: one for heat pumps and one for
20 residential furnace fans that are premature.

21 There was an inclusion of off-mode power
22 consumption in the data submittal requirements for the heat
23 pumps. And there's no test procedure for that yet. In July
24 of 2014 the U.S. Department of Energy issued a non-
25 enforcement policy statement saying that they would not

1 assert several penalties until 180 days after the test
2 procedure was finalized. So I believe that field is
3 mandatory actually right now. And we would ask that that
4 field be updated, so that the input of blank or null would
5 be allowable. And it would be optional until after that
6 test procedure is finalized.

7 And then for the fan efficiency rating for
8 residential furnace fans, the requirement of this metric
9 will be premature, because it does not go into effect until
10 July 3rd, 2019. So until that time we would ask that this
11 field be optional, so that if a manufacturer does rate
12 their fan using that metric then they could report, however
13 that it wouldn't be required.

14 MR. SINGH: Thank you.

15 MR. RIDER: Actually, Laura, let me just ask you
16 just ask you -- maybe this is something we need to take
17 offline and discuss later. But let's assume that we set
18 that field to null and then later we repopulate that once
19 DOE has finished its test procedure. There's a certain
20 amount of administrative -- we would need to coordinate to
21 do that, because we would have to kick the -- there's some
22 data processing stuff that we probably would like to
23 discuss.

24 So maybe we can set up a meeting or something to
25 further discuss this, because I think we need to get into

1 the nitty-gritty about how certification works. And make
2 sure that we understand exactly what your membership would
3 like to see. And then also convey -- it's probably too long
4 for this workshop, but if we could schedule something to
5 follow up on that particular point?

6 MS. PETRILLO-GROH: Yeah, that would be great and
7 we'd be happy to work with the Commission. We know it's a
8 tricky subject and there may need to be repopulating, so
9 thank you. We'll work with you on that.

10 MR. SAXTON: Thank you.

11 MS. PETRILLO-GROH: Thank you, very much.

12 MR. SINGH: Any more comments from the room?

13 Okay. I'm going to unmute the lines. If there any
14 comments on the telephones please, you're all unmuted now.

15 (No audible response.)

16 MR. SINGH: Okay. There are no comments and thank
17 you, very much.

18 And now we can break for lunch, I think. We still
19 have 25 minutes left, but we'll meet at 1:00 o'clock for
20 the water topics. And thank you very much for your time.

21 (Off the record for lunch break at 11:37 a.m.)

22 (On the record at 1:08 p.m.)

23 MR. SINGH: Again, on the presentation, our next
24 presentation is for the Water Efficiency Standards for
25 Toilets, Urinals and Faucets. And our staff engineer Tuan

1 Ngo is presenting it. Tuan?

2 MR. NGO: Good afternoon. Today staff present to
3 you the stakeholder, the public, a proposal to approve the
4 efficiency standards for water appliances. The appliances
5 are toilets, urinals, residential lavatory faucets,
6 kitchen faucets and public lavatory faucets.

7 Why do we need new standards? As Commissioner
8 McAllister mentioned this morning, we are in a serious
9 drought. And we don't see any relief in sight. And our
10 current standards were in place since 1992 and have not
11 been updated.

12 We have AB 715 for water conservation for low-
13 flush water closets and urinals. In a very brief term this
14 law required, by January 1 of 2014 all toilets and urinals
15 for sale in the state had to be a high-efficiency type.

16 And lastly, by reducing water consumption of
17 toilets, urinals, and faucets we can save water and energy.

18 So what is the proposed water efficiency
19 standards that we propose? We are proposing that by July
20 1st of 2016 all toilets shall have a maximum 1.28 gallons
21 per flush, for each flush. And a minimum MaP score of 350
22 grams. By the way, MaP or Maximum Performance Score, is an
23 indicator to just the efficiency of the unit in terms of
24 removing solid materials. First, a higher score means the
25 unit is more efficient in removal solid waste.

1 For urinals staff propose a 0.125 gallons per
2 flush. We also propose some exemptions for toilets and
3 urinals from prison and mental health facilities for safety
4 reasons.

5 Lavatory faucet or bathroom faucet will be
6 restricted to a maximum flow of 1.5 gallons per minute at a
7 pressure of 60 psi and a minimum of 0.8 gallon per minute
8 at a pressure of 20 psi.

9 Kitchen faucets will be reduced or limited to 1.8
10 gallons per minute with an optional temporary 2.2 gallons
11 per minute for filling pots and pans.

12 And then for public lavatory faucets we want to
13 restrict the flow to 0.5 gallons per minute.

14 Staff proposed -- and once adopted -- will be
15 incorporated into the prime efficiency regulation Title 20,
16 Section 1501 to 1608 of the California Code of Regulations.

17 Now, I'd like to walk through each section of
18 Title 20 that is proposed to be changed.

19 In Section 1602 (h) definitions, we propose to
20 revise the "plumbing fitting" definition, one for
21 clarification and to make it consistent with the federal
22 update. We're adding a new category definition for public
23 lavatory faucet to define a type of lavatory faucet
24 intended to be installed in nonresidential bathrooms that
25 are accessible to the public.

1 In Section 1602(i) we're adding two new
2 definitions for dual-flush effective flush volume and dual-
3 flush water closet. To address the new type of toilets that
4 allow users to choose a lesser amount of water for the
5 removal of nonsolid waste.

6 Again, MaP means the maximum flushing performance
7 and as I mentioned earlier it's an indicator of how good,
8 how efficient that unit removal is of solid waste.

9 Plumbing fixture was also revised for
10 clarification.

11 In Section 1604(i) dealing with test methods,
12 we're adding new test methods for MaP testing toilet
13 fixture performance in Version 5 of March 2013. The tests
14 refer to maximum performance. In so many words it requires
15 toilets to be tested (inaudible) close to real thing to
16 ensure proper performance.

17 In 1605.3(h) staff proposed revisions to tub
18 spout diverters and showerheads, faucets and aerators.
19 These modifications are needed to refer these equipments to
20 the specific standards for each appliance.

21 Section 1605.3(h) contains a new Table H-3 with a
22 standard proposal for lavatory faucets, kitchen faucets and
23 public lavatory faucets. As you can see faucets that are
24 manufactured after the effective date must meet the
25 standards specified in the right-hand side of the table.

1 In 1605.3(i) staff add a revised language and a
2 new table, which also contains standards for toilets and
3 urinals. Again, the appliances manufactured after the
4 effective date must meet the standards specified on the
5 right-hand side of the table.

6 Section 1606 for reporting requirements, once
7 again staff propose updating the standard. Then the
8 reporting requirement are also needed to be modified to
9 ensure that the appliances are tested and reported
10 correctly. With that exception data reporting Table X is
11 also proposed to be revised to include new requirements and
12 these are marked in the underlined text in this table.

13 Also Table X also has reporting requirements, but
14 this one is instead adding a new requirement for the new
15 type of toilet that is a dual-flush toilet and the MaP
16 score.

17 At this point staff would like to background
18 basic and analysis that form the basis for recommending the
19 proposed standards to the Energy Commission for
20 consideration.

21 First of all, what are we using? Based on the
22 staff estimation quarterly the state is using 444 billion
23 gallons of water per each year to flow toilets, urinals and
24 running the faucets. The water does not get to the home and
25 building by itself. A lot of energy is needed to pump, to

1 treat the water, to collect and treat it again before
2 releasing it back to the environment.

3 Staff estimate that approximately 4,500 GWh
4 electricity each year is used to pump and treat this water.
5 On top of that some water is needed to be heated for proper
6 or convenient use by the consumers. Staff estimates that
7 about 4,600 GWh of electricity and about a billion therms
8 of natural gas are used for this heating purpose.

9 First thing first, the Energy Commission staff
10 need to do some conventional analysis to ensure that the
11 regulation proposed would be beneficial and effective. And
12 specifically we are required to determine that the adopted
13 regulations be both cost effective and technically
14 feasible.

15 For cost effectiveness, staff found out that the
16 cost of compliant appliances are no different from the cost
17 of noncompliant units. So the consumer and businesses can
18 reap the savings immediately.

19 Well, the cost figure is good, but can
20 manufacturers and the market adapt to the new standards?
21 Which brings us next to the technical feasibility of the
22 regulation.

23 This table, this list, lists all the new -- lists
24 all the technology that manufacturers have been using to
25 reduce water consumption for these appliances.

1 Staff also reviewed a MaP, maximum performance
2 testing position for toilets, and believe that the problem
3 associated with the early release of low-volume faucets in
4 the mid-90s had been solved with the MaP score testing. And
5 for a faucet reducing flow is reliant along existing
6 technology. So it's technically feasible.

7 But this is not the only thing the staff have to
8 do. We also look at our database and the WaterSense
9 database and we see that there are numerous smallest
10 appliances in use, already in use, that meet the standards
11 the staff have proposed. In fact, 49 percent of all tank
12 type toilets already meet our proposed standards, 26
13 percent of flush-o-meter already meet our standards, and 11
14 percent of dual-flush toilets meet our standards, 17
15 percent of the urinals meet our standards.

16 And then over half, 50 percent, of residential
17 lavatory faucets, 33 percent of residential kitchen
18 faucets, and public lavatory faucets already meet our
19 standards.

20 Anyways, there are numerous compliant models
21 available for sale in the state. Staff believe that is an
22 indication of qualifying products that are technically
23 feasible and readily available in California.

24 What about the impact and benefits? Staff
25 analyzed the effect of the proposed standards and concluded

1 there is no additional impact to the environment as a
2 result of adopting and implementing the proposed standards.
3 Staff also looked at the benefits of the proposed standards
4 and concluded that the proposed standards will save a
5 significant amount of water, which will result in an
6 increased availability of water to other users, decrease
7 the need for diversification, decrease associated
8 environmental impacts to riparian and wetland habitats from
9 those diversions and decrease future drought impacts on
10 California.

11 In addition, the proposed standards will also
12 result in avoided emitting of criteria air contaminants,
13 and reduce greenhouse gases to the tune of close to 1.9
14 million tons of equivalent CO2 each year.

15 And this is a bar graph showing the annual water
16 consumption of the appliances before and after the
17 standards take effect. As shown here, and in the staff
18 report, the regulations once fully in effect by 2040 will
19 result in a combined annual savings of about 88.6 billion
20 gallons of water.

21 Of these savings 16 billion come from the
22 residential toilets, 1 billion gallons from commercial
23 toilets, about 3.5 billion gallons from urinals, 22 billion
24 gallons from the residential lavatory faucets and almost 30
25 billion from kitchen faucets and 16 billion gallon savings

1 from public faucets.

2 In addition, the proposed regulations would save
3 additional energy from heating due to natural gas and
4 electricity while causing no adverse impact to the
5 environment.

6 MR. SINGH: Jerry, I have your cards on the PMI
7 (inaudible), so if you --

8 MR. DESMOND: Good afternoon. Commissioner
9 McAllister, Mr. Saxton, Tuan and Harinder, my name is Jerry
10 Desmond, Jr. I'm the California advocate for Plumbing
11 Manufacturers International or PMI.

12 PMI appreciates this opportunity to provide
13 comments on the Energy Commission's current rulemaking on
14 water closets, urinals and faucets under Docket Number 15-
15 AAER-1.

16 PMI is an international, but U.S. based trade
17 association, representing 90 percent of the U.S. plumbing
18 products sold in the United States. PMI has made the
19 promotion of water safety and efficiency a top priority and
20 has even included this in our mission statement.

21 Our members are industry leaders in producing
22 safe, reliable and innovative water efficient plumbing
23 technologies. And PMI has supported water efficiency
24 legislation and codes throughout California and at the
25 federal level including the voluntary US EPA WaterSense

1 program.

2 You know, some examples of PMI's involvement here
3 in California refer to the two pieces of legislation that
4 were referenced in the staff presentation. AB 715 which was
5 Chapter 499 of the Statutes of 2007 included a PMI-authored
6 model transition to water efficient toilets and urinals
7 with an implementation date of 100 percent by 2014.

8 Similarly, PMI supported SB 407, Chapter 587 of
9 the Statutes of 2009 that provide by 2019 for the
10 replacement of noncompliant products in both multi-
11 residential and commercial settings.

12 More to the point today, PMI appreciates and
13 supports the recommendations that are in the proposed
14 regulation on several of the products that are very
15 important to Californians.

16 First, the provision that provides that all
17 toilets, except those designed for prisons or mental health
18 facilities, shall have a maximum consumption or effective
19 flush volume for dual-flush toilets of 1.28 gallons per
20 flush and shall have a 359 gram performance threshold.

21 Second, PMI supports the proposal in the
22 regulation that all residential lavatory faucets shall not
23 exceed a flow rate of 1.5 gallons per minute at 60 psi and
24 shall have a minimum flow rate of 0.8 gallons per minute at
25 20 psi.

1 Third, PMI supports the proposed regulation that
2 would provide that all kitchen faucets shall not exceed a
3 flow rate of 1.8 gallons per minute and may have the
4 capability to increase to 2.2 gallons per minute
5 momentarily for filling pots and pans.

6 And then fifth, (sic) PMI supports the provision
7 in the regulations providing that all public lavatory
8 faucets shall not exceed a flow rate of 0.5 gallons per
9 minute at 60 psi.

10 We concur in the analysis set forth in the staff
11 presentation here today, that indicate that billions of
12 gallons of water, millions of therms of natural gas, and
13 thousands of GWh of electricity per year will be saved
14 without jeopardizing, which is quite important, public
15 health and safety or resulting in plumbing system
16 performance issues.

17 You know, next we do have some issues we'd like
18 to bring up with the proposed regulations. And that will be
19 presented by PMI President Fernando Fernandez next, if
20 that's fine, Harinder?

21 MR. FERNANDEZ: Good, thanks for being here.

22 Good afternoon, Commissioner McAllister, Mr.
23 Saxton, CEC staff and everyone in attendance today.

24 My name is Fernando Fernandez. I represent Toto
25 USA, a plumbing products manufacturer. And I'm here also

1 representing PMI, Plumbing Manufacturers International, as
2 their president for 2015.

3 PMI is a trade association representing 34 member
4 companies comprised not only of manufacturers, but of code
5 development bodies in standards development organizations
6 too. I'm glad to be here today to have the opportunity to
7 address the appliance efficiency rulemaking process
8 concerning plumbing fixtures and fittings.

9 There has been no other environmentally focused
10 topic discussed more frequently as of late, than the
11 drought conditions faced by this state. PMI applauds the
12 efforts made by the Commission thus far in updating the
13 appliance efficiency program under Title 20, which
14 implements measures to further conserve our most coveted
15 commodity -- drinking water.

16 More specifically, the CEC has made some great
17 strides to affect positive change with respect to water
18 efficiency. The word "efficiency" is indicative of two
19 principle elements: conservation and performance. And the
20 two go hand-in-hand, especially in the plumbing arena where
21 fixtures and fittings are not only dependent upon
22 conveyance of water, but also relied upon for their
23 distribution of it in a safe and effective manner all
24 within the plumbing system.

25 With that in mind, plumbing product manufacturers

1 are some of the best stewards of water efficiency around
2 today. They not only produce these water efficient
3 products, they not only advocate for water efficiency, they
4 not only participate in industry events to update standards
5 such as we see here today, but also influence codes and
6 policy making as well. But they have one unique advantage
7 that sets them apart from other groups. They know their
8 products limitations better than anyone.

9 This is important as it relates to health and
10 safety, important as it relates to product performance and
11 user satisfaction, and important as it relates to the water
12 and energy nexus.

13 Here we are over 20 years separated from the
14 effective date of the Energy Policy Act of 1992 and thanks
15 to collaboration between manufacturers, EPA, and other
16 industry stakeholders starting in 2006 a number of high
17 efficiency WaterSense standards have been created. We're
18 all very familiar with those. And the process continues to
19 this day by which manufacturers certify their products too.

20 This is a very significant accomplishment,
21 because the performance requirements and water consumption
22 levels predicated therein have been thoroughly vetted by
23 industry stakeholders in addition to being time tested.
24 This means that there are no adverse effects on the
25 plumbing system nor dissatisfaction by consumers. As a

1 matter of fact, the WaterSense criteria covering various
2 product lines are now reflected in industry consensus
3 standards as well.

4 However, there is a bit of a misperception
5 floating around that the EPA WaterSense referenced maximum
6 consumption levels are now the new norm and therefore imply
7 that these are perhaps outdated and should be challenged,
8 because they are insufficient or inadequate. This
9 perception is damaging. It leads to moving all too
10 precipitously into a race of how low can you go, and lower
11 is better, falsehood. If there's any one thing that trumps
12 the water/energy nexus it is the spectrum of health, safety
13 and environment.

14 There are consequences as a result of going too
15 low. Solely focusing in on a single element of the plumbing
16 system, to be the end-all/cure-all for water woes, is the
17 wrong path to take. A paradigm shift must occur to take
18 into account other modes of conservation to make a
19 significant impact.

20 Manufacturers do and will continue to produce
21 high efficiency products to meet the needs for a particular
22 application, but they should not be limited in their
23 product offering with solutions to marketplace needs. This
24 is why it is important to recognize our voice, our
25 solutions and our concerns.

1 That said, once again PMI supports the direction
2 of the CEC with the appliance efficiency guidelines with
3 one significant exception. In addition to the editorial
4 comments PMI has already submitted limiting wall-hung
5 urinals to a one-pipe maximum is very restrictive. Based on
6 knowhow and experience there is a tipping point where the
7 frequency and duration of use of a urinal is greater than
8 the volume of water to dilute the urine and carry it into
9 the drain.

10 Also, urinals are not always activated upon each
11 use. At one pint, this will lead to an accelerated growth
12 of mineral deposits better known as Struvite. This urine-
13 based formation inside the pipe walls at the stub-out
14 connection to the urinal leads to clogging. Having Struvite
15 scale leads to inefficiency and poor performance due to
16 clogging of the pipes.

17 In an attempt to alleviate plumbing system
18 incompatibilities it is the inherent nature of model
19 plumbing codes to address the proper selection of materials
20 and their installation with due regard to preservation of
21 strength, of structural members, and prevention of damage
22 through fixture use.

23 Additionally, SB 407 is a law that requires a
24 transition of plumbing fixtures in real property to more
25 efficient models within a targeted timeframe for building

1 alterations and real estate disclosures. With respect to
2 commercial buildings this mass scale transitioning can have
3 a detrimental effect if only one-pint urinals are
4 available. And can only lead to more costly repairs or
5 alternatives.

6 Moreover, I would like to take a moment to
7 reflect on the comments submitted by a vast majority of
8 industry stakeholders during the pre-rulemaking who also
9 concurred on retaining half-gallon per flush urinals, which
10 again are a 50 percent water savings over the federally-
11 mandated level.

12 Comments were submitted by organizations
13 representing code developers, standard developers, the
14 building industry, plumbing engineers, water utilities and
15 other key groups that represent the expertise and the
16 knowledge base when it comes to plumbing. This is the
17 largest cross-section of plumbing/building water cosmos in
18 alignment on this topic and water efficiency in general,
19 that we have seen.

20 With that, I ask you for your reconsideration on
21 this topic, to retain half-gallon per flush for wall-
22 mounted urinals. This will allow manufacturers to continue
23 to innovate while offering selection for a variety of
24 applications; applications that may call for non-water
25 urinals, for one-pint urinals, and also for half-gallon

1 urinals. Thank you.

2 COMMISSIONER MCALLISTER: Thank you, very much for
3 being here, appreciate your comments.

4 MR. SINGH: Okay. Let me get the name, yes please.

5 MR. LEHTONEN: Good afternoon, Commissioner
6 McAllister and Mr. Saxton, CEC staff and interested
7 parties. My name is Steve Lehtonen, I'm the Senior Vice
8 President for Environmental Education with the
9 International Association of Plumbing and Mechanical
10 Officials, better known as IAPMO.

11 We appreciate this opportunity to comment once
12 again, to the California Energy Commission regarding the
13 current rulemaking on water closets, urinals and faucets as
14 outlined in their most recent analysis, staff analysis, for
15 toilets, urinals and faucets that we support, as they
16 pertain to toilets, residential lavatory faucets, kitchen
17 faucets and public commercial faucets.

18 However, we remain concerned about the provisions
19 pertaining to urinals due to a lack of research and field
20 experience with urinals flushing on 0.125 gallons per
21 flush. Our concerns center on the continued efficacy of
22 sanitary building drains. Installation failures caused by
23 Struvite buildup in the building drains can occur due to
24 insufficient scouring action. Such failures are extremely
25 disruptive to the operation of a building as they result in

1 strong and excessive odors that often necessitate
2 evacuation of areas adjacent to the bathrooms encountering
3 such problems.

4 Clearing drainage from Struvite blockage is
5 considered to be one of the most unpleasant jobs in the
6 plumbing trade. Prior to implementing a requirement for the
7 installation of 0.125 gallons per flush max urinals IAPMO
8 strongly recommends that research be conducted on both
9 0.125 urinals and non-water consuming urinals. So that the
10 implications regarding the continued efficacy of building
11 drains are better understood.

12 In addition, IAPMO recommends that a survey of
13 existing buildings that employ 0.125 gallon urinals and
14 non-water consuming urinals be conducted to compare the
15 buildup of Struvite in the building drains and the fixture
16 stub-out to similar aged installations employing higher
17 consumption models.

18 Alternately, IAPMO recommends that the maximum
19 flush volume for urinals be set at 0.5 gallons per flush,
20 which is consistent with AB 715 and CALGreen and the U.S.
21 EPA's WaterSense Program.

22 IAPMO is a founding member of the Plumbing
23 Efficiency Research Coalition, PERC. PERC is an ad hoc
24 coalition of plumbing and water efficiency associations
25 solely focused on conducting research on plumbing-related

1 issues that pertain water efficiency such that unintended
2 consequences of water efficiency can be avoided. PERC is
3 well suited to conduct research on the issue of 0.125
4 gallons per flush and non-water consuming urinals.

5 IAPMO recommends that the Commission work
6 together with PERC on a collaborative research program to
7 determine the impact to determine the impact that these
8 fixtures will have on building drains. We would gladly
9 welcome convening a dialogue with the Commission on such a
10 project allowing the Commission's regulation to be
11 determined by sound research.

12 Finally, as an accredited consensus standards
13 developing organization IAPMO recommends that the
14 applicable consensus standard be referenced in the
15 Commission's regulation. ASME A112.19.2 provides the
16 consensus-based requirements for water closets and urinals.
17 ASME A112.18.1 provides the consensus-based requirements
18 for faucets and shower heads.

19 In closing, IAPMO would like to thank the
20 Commission for their continued consideration of our
21 comments. As a California-based association we fully
22 appreciate the urgent need for immediate and drastic action
23 to address the ongoing and devastating drought ravaging our
24 state. However, poorly considered regulations can not only
25 result in disruptive and costly repairs in buildings, but

1 also have the potential for the public to question other
2 water efficiency provisions.

3 We look forward to working with the Commission
4 proactively to help arrive at regulations that are not only
5 well-intended, but which are also based on sound research
6 and data. And I would like to conclude also by saying that
7 we appreciate that the staff of the Energy Commission has
8 participated with us in our green plumbing and mechanical
9 taskforce. Thank you.

10 COMMISSIONER MCALLISTER: Thanks very much for
11 being here and your comments.

12 MR. GLEIBERMAN: Hello, Commissioner McAllister
13 and Mr. Saxton, my name is Daniel Gleiberman. I'm a manager
14 of product compliance and government affairs for Sloan
15 Valve Company. We're a large commercial manufacturer based
16 in Chicago, Illinois and also here in California. And I'm
17 also a member of PMI. I'm a chairman of their Water
18 Sustainability and Efficiency Committee.

19 And I want to add just a few brief comments to
20 what's already been stated by PMI members and by Steve from
21 IAPMO.

22 In the staff's presentation it was indicated that
23 our regulations under Title 20 haven't been updated since
24 1992. So we are absolutely here to support the effort and
25 all the hard work that staff and the Commission is doing.

1 Since that time, as others have mentioned, there have been
2 several plumbing code updates, building code updates, green
3 code updates and state law updates all of them dealing
4 specifically with some of these very water appliances that
5 we're dealing with today.

6 And we think it's important to not have a
7 difference between the building code and the plumbing code
8 in Title 20. The building code and the plumbing code deal
9 with the installation, the safe installation, the
10 inspection, the safe inspection and the maintenance, the
11 safe maintenance of those products. Title 20 deals with the
12 sale of those. That's why we would be recommending that for
13 now, Title 20 is aligned with AB 715, which is for the
14 urinal, specifically a 0.5 gallon per flush.

15 We don't want to leave any water on the table,
16 just like no Commissioner, no responsible policy maker
17 would. But we feel it's premature to have a difference
18 between the building code and the plumbing code and what
19 Title 20 would allow.

20 Just to give you an example, as a manufacturer we
21 may have a product that has gone through extensive testing
22 at great cost to us, through a third-party certifier like
23 IAPMO, and that carries a WaterSense label at a 0.5 gallon
24 per flush. That's recognized as a safe product that's been
25 tested and a water efficient product, but we wouldn't be

1 able to sell that in California, because Title 20 would
2 prohibit that where the plumbing code in California would
3 still allow it.

4 Similarly, and I think I would just almost close
5 by this, there were some other references to SB 407 and I
6 know there's been written documentation presented already
7 from other stakeholders on that.

8 Just in summary, for those of you that may not
9 recall SB 407 was adopted in 2009 and it was rather
10 groundbreaking, because it was really trying to force the
11 issue about how we can get rid of inefficient products in a
12 responsible cost-effective manner and try and save water in
13 existing buildings. It had a very long gestation period.
14 It's coming, I think, not due until 2019, but for
15 commercial buildings. And I'm just going to speak
16 specifically about commercial buildings now, because of 0.5
17 gallon per flush urinal issue.

18 At the time of its contemplation, at the time of
19 its adoption, it wasn't contemplated that there would be
20 restrictions on the available products for those existing
21 buildings with older infrastructure as Steve was mentioning
22 from IAPMO. That there would be a range of products that
23 would be more efficient than what is currently on the wall
24 or currently installed, but still allow that building to
25 perform in a safe, healthy, non -- what's the word I'm

1 looking for -- nonintrusive manner.

2 We've heard that, if in fact, urinals don't work
3 properly in existing installations, because they need more
4 water than just a pint urinal then that cleanup is rather
5 onerous. It's not a pretty job and I would offer that maybe
6 there's some health impacts associated with the occupants
7 of the building or the people having to do the work that
8 haven't also been contemplated by the rulemaking.

9 So in summary, I'd like to just point out that we
10 do want minimum levels of operating efficiency as was
11 stated by staff in their introductory comments. We do feel
12 that there are potential environmental impacts if the
13 mandate in Title 20 is in conflict with what is currently
14 in the building code and the plumbing code, which is still
15 again very efficient. We're gone from 1 gallon down to 0.5,
16 so that's a 50 percent efficiency.

17 And I'm not saying we should stop there by any
18 means, but to limit the availability and the choices for
19 existing buildings and their desire to go efficient, we
20 think, isn't the right thing. And from the standpoint of
21 not PMI, but from Sloan as the manufacturer, we don't
22 believe that those costs that may be imposed on the
23 building owners have been adequately quantified by the
24 presentation.

25 And obviously, I'm available to answer any

1 questions. And again, I thank you very much for your time.
2 We will consolidate some of these in a written form prior
3 to the end of the public hearing deadline.

4 COMMISSIONER MCALLISTER: Thank you, very much

5 MR. GLEIBERMAN: Thank you.

6 MR. SINGH: Charles with Edison, I saw your raise
7 hands, any comments?

8 MR. KIM: (Inaudible)

9 MR. SINGH: Okay.

10 MR. KIM: Thank you, very much for the opportunity
11 to speak. My name is a Charles Kim, I'm with the Southern
12 California Edison Company. I'm speaking on behalf of the
13 Statewide IOU Codes and Standards Team.

14 Three consecutive years of a drought challenged
15 Californians. Now, we are facing one more year of a
16 drought. We need to face this challenge and I applaud CEC
17 to take this monumental task to provide a sensible solution
18 to address the drought.

19 This is not an easy task, that requires not just
20 support from the Californians, but also the manufacturers.
21 We need face this challenge within the context of our
22 regulations. Do we have a cost effective solution available
23 out there? Do we have a sufficient knowledge to meet the
24 challenge of a drought that Californians are facing? Does
25 it save water? Does it save energy and etcetera? And our

1 case study clearly demonstrates that and our supporting
2 documents clearly support that.

3 Other agencies are right now looking at different
4 ways to reduce water. And I agree with the previous speaker
5 stating that Title 20, Title 24 and plumbing code needs to
6 work together to resolve this issue. And I fully agree with
7 that, but what I want to say here is that I want to ask
8 Commissioner to look once more and look deeper. And see if
9 there is anything else that we can do to improve our water
10 efficiency for these fixtures.

11 And my colleagues and my consultants are going to
12 make specific comments, the opportunities where we can make
13 more bold steps to address the drought issues that we are
14 facing today and one more year, maybe more. And CEC has an
15 opportunity to address our challenges today. So I ask CEC
16 once more look deeply, look once more, and see where we can
17 find better solutions.

18 And I want to introduce, once again my coworker
19 and consultant, Heidi, to make specific comments. And we'll
20 submit our comments in written form and it will be
21 docketed. Thank you, very much Commission and staff, to
22 make this bold, bold movement to address our challenges in
23 this water drought. Thank you.

24 COMMISSIONER MCALLISTER: Thanks for being here.

25 MS. HAUENSTEIN: Saving paper today. All right, my

1 name's Heidi Hauenstein. I'm here today on behalf of the
2 California Investor Owned Utility Codes and Standards Team.
3 And I have some specific comments about the proposed
4 standards for both plumbing fittings and plumbing fixtures.

5 So overall, the Utility Team is really pleased
6 that the Energy Commission has taken on the water
7 efficiency standards and are proposing measures that really
8 are going to save quite a bit of water.

9 On the high level we would recommend that you,
10 like Charles said, look beyond what is already adopted as
11 state law through AB 715 and see if there's additional
12 savings that can be achieved.

13 So I'm going to start with comments on plumbing
14 fittings, which is faucets. So the Utility Team supports
15 the CEC's proposal for lavatory faucets and public -- or
16 kitchen faucets and public lavatory faucets. We maintain
17 our original recommendation, that the efficiency for
18 residential lavatory faucets should be set at a maximum
19 flow rate of 1 gallon per minute at 60 psi. And a minimum
20 flow rate of .5 gallons per minute at 20 psi.

21 And adopting this more stringent level will
22 result in additional savings of 12 billion gallons after
23 full stock turnover. And that is equivalent to the average
24 annual water use of approximately 185,000 Californians.

25 I wanted to address head on, some of the comments

1 that were received in this rulemaking. So first, with
2 regards to opportunistic pathogens, some folks have raised
3 concern about the potential link of green plumbing systems
4 with an increased risk of exposure to opportunistic
5 pathogens.

6 So the existing body of research is insufficient
7 to prove that there is a correlation between faucet flow
8 rates and an increased risk of exposure to opportunistic
9 pathogens. When we were doing our research on this we spoke
10 with a number of folks. And one gentleman, Mark Edwards, is
11 really leading the charge on opportunistic pathogens in
12 premise plumbing systems. And he confirmed that a 2006
13 study published by the Journal of Applied Microbiology is
14 the only study to his knowledge, and to our knowledge, that
15 has directly evaluated the impact of faucet flow rates on
16 pathogen growth.

17 And I'm just going to read some quotes from that
18 study and I handed a copy to staff and to Commissioner
19 McAllister. So I quote, "Stagnation within water systems
20 has been cited by numerous authors as a condition favoring
21 Legionella replication. However, the effect of low flow
22 conditions on the presence of Legionella in water systems
23 has not been scientifically evaluated. Therefore, we
24 investigate the effects of flow dynamics on the presence of
25 Legionella in a model plumbing system under controlled

1 conditions."

2 And then later in the report they conclude, "The
3 results of our model failed to show that stagnation
4 promoted growth of Legionella. Similarly, in a small
5 controlled study of disinfection in a hospital colonized
6 with Legionella, removal of deadlegs had no effect on
7 Legionella colonization."

8 So the other result of this study is that
9 turbulent flow, which is experienced at high flow rates
10 actually promoted Legionella growth. And as you have heard
11 from comments on the docket that a lot of hypotheses
12 actually suggest that stagnation leads to Legionella growth
13 and this study did not find that conclusion.

14 So moving on to the next comment that we received
15 in the docket and this is regarding the hot water wait time
16 and the amount of water that is wasted when you wait for
17 hot water to arrive. So some commenters have voice concern
18 that reduction of the lavatory faucet flow rate in
19 residential buildings could lead to unintended consequences
20 of wasted water and energy.

21 So it is really difficult to demonstrate the
22 amount of water that is wasted throughout California,
23 because there's a lot of variability in the existing
24 buildings. And there hasn't been a comprehensive survey of
25 all existing plumbing systems, so it's difficult to

1 validate assumptions.

2 However, PMI submitted a report that looked at an
3 example of the wasted water in a sample building. So we
4 took PMI's results, which in our docketed comments we
5 pointed out a few points where we think that PMI's results
6 may be overstating the water use a little bit or the wasted
7 water, but regardless we used PMI's assumptions and we
8 reran our analysis.

9 And what we found was that there is still
10 significant water and energy savings associated with the 1
11 gallon per minute faucet standard, even considering the
12 wasted water. I think that it was a 6 percent reduction in
13 the water in embedded energy savings and an 11 percent
14 reduction in the energy use for electricity and natural gas
15 from hot water savings. So we do understand that there is a
16 little bit of a penalty, but it doesn't even come close to
17 negating the savings of the measure.

18 And the benefit-to-cost ratio. If you have
19 natural gas water heating, then the benefit-to-cost ratio
20 is 20. And if you add electric water heating then the
21 benefit-to-cost ratio is 35. So this is still a very cost-
22 effective measure that results in a huge amount of savings,
23 12 billion gallons of savings at stock turnover.

24 And then just one other point on the faucets is
25 consumer satisfaction surveys show that consumers are very,

1 very satisfied with 1 gallon permitted faucets. So it's not
2 adopting a standard that would have a detrimental impact on
3 how consumers perceive their products.

4 So I think that concludes my substantive
5 comments. We do have a few editorial revisions to propose
6 for our faucets and that is Table H-3 should be updated to
7 clarify that the requirement at 20 psi is actually a
8 minimum flow rate, it's not a maximum flow rate. And then
9 also a clarification that the requirements in Table H-3
10 should apply to the faucet and the replacement aerator or
11 replacement accessory.

12 Okay. So I'm going to move on to our comments on
13 plumbing fixtures, which is toilets and urinals. So the
14 Utility Team supports the proposed standards for both
15 toilets and urinals. We are pleased to see that you are
16 recommending a pint urinal or a pint requirement for
17 urinals.

18 Just to highlight the importance of going beyond
19 AB 715 on urinals is adopting the pint urinal as opposed to
20 half-gallon will result in 1.7 billion gallons of water
21 savings after stock turnover. The Utility Team has provided
22 quite a bit of information in response to comments on how
23 the pint urinal might affect the building drainage systems.

24 And just to highlight some of the key points that
25 we've already submitted and docketed one is that there is

1 no evidence that the pint urinal will cause Struvite
2 buildup that is going to cause irreparable damage to the
3 building. And commenters have raised this concern, but they
4 have failed to actually provided data to demonstrate the
5 viability of this concern.

6 Number two, manufacturers of pint urinals sell
7 these pint urinals and provide no additional guidance on
8 where those urinals can actually be installed without
9 causing damage to your building. And also that maintenance
10 practices including flushing each urinal on a regular basis
11 can help address this unproven concern of Struvite buildup.
12 And the proposed standard of a pint urinal will still
13 result in cost-effective water savings.

14 So moving on to toilets, we do support the
15 Commission's proposed standard of 1.28 gallons per flush
16 per toilets. We would recommend -- I think that other folks
17 have recommended this as well -- that tank type toilets
18 meet the requirements of the WaterSense specification.

19 And then for editorial comments the definitions
20 in the standards, this is actually for both plumbing
21 fixtures and fittings should be consistent with the DOE and
22 ASME definitions. We support the fact that the Energy
23 Commission is aiming to require that manufacturers submit
24 the waste extraction scores as part of their compliance.

25 And oh, I forgot one comment about urinals. There

1 are pint floor-mounted urinals and we would recommend that
2 you consider requiring the pint level for all urinals, both
3 wall-mounted and floor-mounted. And we'll include more
4 information about that in our written comments.

5 Okay. And then the final comment that I have here
6 today is that Table I-2 should be updated, so that the
7 requirements apply to water closets, urinals and the
8 flushing devices associated with those urinals and toilets.

9 All right, that's all. Thank you for the
10 opportunity to comment today.

11 MR. NGO: Thank you, Heidi. Heidi, I have a
12 question for you, just one quick one. Originally IOU
13 proposed pint-sized urinals only for wall mount. Now, you
14 want to propose pint-sized for floor mount also?

15 MS. HAUENSTEIN: Yes.

16 MR. NGO: Oh, okay. I've got you. I just wanted to
17 make sure that I understand what you're saying. Okay, thank
18 you.

19 MR. SINGH: Pierre?

20 MR. DELFORGE: Thanks. Commissioner, staff, thank
21 you again for the opportunity to comment.

22 I think one thing that all the speakers have
23 agreed on today is that we are in a serious drought, I
24 would call actually a crisis situation, regarding water.
25 And given the clear scientific evidence that we have on the

1 trends in terms of both precipitation and temperature, what
2 is a drought today may be the new normal in a few years or
3 worse. So I commend the Commission's leadership in adapting
4 to the situation and ensuring that we have plumbing
5 fixtures that minimize the waste of water in the states. So
6 that we can use the water that we have for the most
7 critical uses and not waste it when we don't need to.

8 We generally strongly support the Commission's
9 proposal on most of the plumbing fixtures. I would like to
10 focus my comments on two fixtures. I'll start with urinals.
11 We strongly support the Commission's proposal of a pint
12 size or pint flush urinal standard. Half a gallon, which is
13 significantly more than proposed standards, when you think
14 about it that's a lot of water to flush just a couple of
15 ounces of liquid waste. And when you have waterless urinals
16 available already, and working, it doesn't seem to be
17 justified given the current situation to need to require a
18 half a gallon to flush urinals.

19 We also would like to note that 35 percent of the
20 model systems available, or 35 by WaterSense, are already
21 meeting that pint-size flush standard.

22 We also have some solutions to the problems that
23 were raised by previous speakers on potential Struvite
24 buildup. And one of them, for example, with technology
25 solutions, which already available, is to use electronic

1 valves that can perform a courtesy flush if a urinal is not
2 used for a period of time. So, for example, if your
3 building is not used for several days of a long weekend or
4 something like that you can program the valves to flush
5 once a day and restore the trap and compensate for the
6 evaporation that could lead to odor or other issues. So we
7 have technology solutions today that can be used to remedy
8 this potential risk.

9 I would also emphasize the point raised by Heidi
10 early on that an examination of the manufactured
11 literature, both installation specs and warranty
12 information and manuals and everything, doesn't show any
13 evidence of instructions on how to -- or what are the
14 requirements for the plumbing system to be able to store
15 pint urinals. There are some on the water supply system,
16 but not on the drainage system. So if that were really a
17 problem you would expect that this would show up in the
18 literature.

19 The last point, the Los Angeles DWP has already
20 for the last five years implemented pint-flush urinals and
21 there have been no problems reported so far. And you would
22 think if there were problems, five years would be a
23 sufficient amount of time to provide evidence of these
24 problems.

25 So we strongly support the standards. The

1 difference between the two proposals is about three billion
2 gallons a year and every gallon counts, so that's a lot of
3 water here which is at stake.

4 My second point is on lavatory faucets, so we saw
5 on the data provided by Tuan early on how faucets are some
6 of the largest water users in the state. And the IOU and
7 NDRC proposal of 1.0 gallon per minute on faucets stands to
8 save 12 billion gallons per year in use after stock
9 turnover. That's a huge amount of water and I second the
10 call by the IOUs to look a little bit harder in some cases.
11 And I think in this one particular, WaterSense is no longer
12 sufficient and we need to look beyond WaterSense to address
13 the state's situation.

14 There are already about 250 models or systems in
15 the CEC Database that meet this standard. And as Heidi
16 mentioned we have consumer satisfaction surveys, which show
17 very high satisfaction with these fixtures. So there's no,
18 you know, wait times don't seem to be a substantial concern
19 with these solutions.

20 So we urge the Commission to reconsider its
21 position on this and to -- you know, there's 12 billion
22 gallons at stake -- and that's a substantial amount that
23 warrants closer examination.

24 With this, I would like to thank the Commission
25 for its leadership again and look forward to the final

1 proposal and to the adoption. Thank you, very much.

2 MR. SINGH: Thank you, Pierre.

3 Next is Eddie.

4 MR. MORENO: Good afternoon, happy Saint Patrick's
5 Day. I'm Eddie Moreno on behalf of the Sierra Club
6 California. I just want to thank staff and the Commission
7 for all the work they've done so far and all of the efforts
8 that are still in the pipeline as far as energy efficiency.
9 It's an exciting opportunity for Sierra Club to continue to
10 work with you guys.

11 The standards for toilets, urinals and faucets
12 are essential and we support their adoption that will
13 likely encourage greater efficiency for faucets and
14 urinals. We've heard some pretty interesting things from
15 the stakeholders today, so we'll be reaching out to them.
16 And I'll be taking a lot of this back to my members and
17 we'll be submitting comments before the deadline, so thank
18 you.

19 MR. SINGH: Thank you.

20 Any comments from the floor, anybody else who
21 wants to make a comment?

22 (No audible response.)

23 Ken, will you then do the --

24 MR. RIDER: Yeah, we'll see if there's any
25 comments on the phone. We have several. I'm going to start

1 with John Koeller. I'm going to unmute you, John.

2 MR. KOELLER: Yes.

3 MR. RIDER: We can hear you, John, so go ahead.

4 MR. KOELLER: Good, thank you. This is John
5 Koeller. I'm a registered professional engineer in
6 California, co-developer of the MaP testing that was
7 referred to earlier in the presentation, which means
8 Maximum Performance Testing for toilets developed in 2002-
9 2003. And now the online database shows well over 3,000
10 tested toilet models of all types, free access to anyone
11 who wants the information on flush performance.

12 But the reference in the documentation to MaP is
13 probably a stretch, because number one, there's some
14 intellectual property issues with the use of that term plus
15 it's a registered trademark. So I'm going to suggest that
16 you substitute the term "bulk waste removal" for the word
17 "MaP" in the documentation. And you'll probably hear from
18 some other people in the comments saying somewhat the same
19 thing, so we want to take MaP out of those references.

20 My second point is on public lavatory faucets,
21 where I'm not sure what the baseline is that was being
22 used, but the national standard, the ASME/ANSI Standard for
23 public lavatory faucets has been at 0.5 GPM for about 20
24 years. Now, that happened right after EPAC in the mid-90s,
25 so I don't believe that you can claim savings for something

1 that's been in existence for that long.

2 Now, I agree that there've been a lot of
3 noncompliant faucets installed, maybe out of ignorance,
4 maybe for other reasons, but it took LEED six years to
5 acknowledge that the true baseline is 0.5. So the actions
6 by the CEC here are merely, in my view, to just acknowledge
7 a pre-existing baseline that's been around for two decades.

8 So that's all my comments for today.

9 MR. RIDER: Thank you, John.

10 MR. KOELLER: Uh-huh.

11 MR. RIDER: I'm now going to go to Marianne
12 DiMascio and you are unmuted.

13 MS. DIMASCIO: Okay. Hi, this is Marianne DiMascio
14 from the Appliance Standards Awareness Project. And I'd
15 just like to briefly commend the Commission for their work
16 and say we are in support of the standards that you have
17 outlined. And will also likely support stronger standards
18 for both urinals and faucets as I know Pierre from NRDC has
19 mentioned earlier in primarily thinking about the severe
20 drought. And as an East Coast person hearing what is going
21 on in California, the extent of the crisis, it seems like a
22 very important thing to do.

23 So I'll end my comments there. Thank you.

24 MR. RIDER: Thank you.

25 Matt Sigler, you're unmuted.

1 MR. SIGLER: Yeah, thank you. This is Matt Sigler
2 of Plumbing Manufacturers International. I'm the technical
3 director and I'd like to thank the Commission, Commissioner
4 McAllister, Tuan, Harinder and Patrick as well for this
5 opportunity to speak.

6 I would like to reiterate what Danny Gleiberman,
7 Fernando Fernandez and Jerry Desmond said on behalf of PMI.
8 We are in support of what you're doing other than with the
9 urinals, which is something that they will be discussing
10 further during this public hearing.

11 What I would like to address right now in my
12 brief comment is regards to residential lavatory faucets.
13 There were some comments made during -- previously, I
14 believe by Heidi, in regards to there not being any recent
15 studies in regards to the possible pathogen growth and link
16 to waterborne illness that can result from low flow
17 fixtures.

18 And so I'd like to draw your attention to a study
19 that was conducted by the Water Research Foundation in 2014
20 that was titled "Green Building Design: Water Quality and
21 Utility Management Considerations" that was docketed by the
22 CEC staff during the 2014 Appliance Efficiency Pre-
23 Rulemaking Process.

24 I'd like to draw your attention to the following
25 statement in the research study. It says, "The low flow

1 through water-reducing faucets is linked to low pressure
2 and an increased stagnant volume of water in the pipes
3 leading to the tap. This could provide ideal growth
4 temperatures for Legionella and Pseudomonas. The reduced
5 flow and pressure could be incapable of providing enough
6 water volume or turbulence to properly flush and clean the
7 faucet, which has implications for biofilm attachment and
8 release rates that are not well understood."

9 As far as comments submitted by Dr. Mark Edwards,
10 Dr. Paul Sturhman and Jim Keene, all three of these I'd
11 like to make sure are included in the record, all submitted
12 comments that yes there still needs to be done in this
13 area. But they are all very concerned of lowering flow
14 rates.

15 PMI's position on this, and we've made it very
16 clear, is on health and safety. What I've heard is in
17 regards to purely water and energy efficiency and what the
18 savings you can have there. Well, what we're focused on
19 there is public health and safety and that's more important
20 than water efficiency savings.

21 And so I would just draw everybody's attention to
22 the comments previously submitted from Dr. Mark Edwards,
23 Dr. Paul Sturhman, Jim Keene and from the Water Research
24 Foundation report that was docketed all during the 2014
25 Appliance Efficiency Pre-Rulemaking Process. And I'll stop

1 at that. Thank you.

2 MR. RIDER: Thanks, Matt. We have one call-in user
3 I'm going to unmute to see, just in case. you're unmuted if
4 you'd like to make a comment.

5 (No audible response.)

6 This is the last thing. I guess, do you want to
7 go to broad comments again?

8 So yeah, any other comments? This is the last
9 chance before we wrap up -- oh, I see John McHugh there.
10 Let me -- John, are you unmuted, John McHugh?

11 MR. MCHUGH: Yeah. Am I unmuted now?

12 MR. RIDER: You are, I can hear you.

13 MR. MCHUGH: Great, okay. Thank you, very much.
14 This is John McHugh. These are on my own behalf.

15 One of the things that these standards have
16 identified is the power of information. And the Energy
17 Commission has a long history of not only providing
18 mandatory standards, but also just test and list standards.

19 When it comes to toilets, I don't think that
20 we've actually done enough. And it appears to me that
21 ideally the Energy Commission not only looks at this Title
22 20 standard, but also how this Title 20 standard impacts
23 other California standards such as the CALGreen building
24 standard. The issue is this, is that I think PMI and other
25 folks in the plumbing industry have identified that there

1 is some uncertainty about how some products operate on all
2 piping systems. And the proposal today is focused at sort
3 of those minimally-performing equipments that can handle a
4 variety of different piping configurations.

5 But moving into new buildings we should be
6 looking at higher levels of water efficiency for new
7 buildings. And in particular, I think it's important that
8 the consumers actually have some information about the
9 maximum extraction value that John Koeller was talking
10 about earlier. I think it's very important that we look at
11 flow traits that are especially for new construction that
12 are less than what are being proposed here. And at the same
13 time make sure that people have the knowledge and the
14 information to make decisions that their product is going
15 to be able to flush the volumes that they think are there.

16 So the issue being is that I would recommend that
17 this Title 20 standard look at requiring that products that
18 are sold in California actually test to failure in terms of
19 maximum extraction levels, that that be labeled on the
20 packaging, and that this labeling will then assist
21 potentially building standards for new building. Thank you,
22 very much.

23 MR. SINGH: Thank you, John.

24 Yes, Shabbir?

25 MR. RAWALPINDIWALA: Yes, this is Shabbir

1 Rawalpindiwala with the Kohler Company. I just wanted to
2 expand on what John Koeller said about referencing the MaP
3 being a registered trade and could be an intellectual
4 property issue. And I totally agree with him and thereby
5 request that CEC consider referencing the ASME A112.19.2
6 standard for the bulk removal test -- i.e. the soya bean
7 test rather than the MaP. And I think I have also submitted
8 that in my comments in writing also. And I appreciate you
9 giving me the opportunity to offer my comments. Thank you.

10 MR. SINGH: Thank you.

11 Okay. Any more comments on the web or phone, via
12 phone?

13 (No audible response.)

14 Okay. If not we are going to conclude this
15 presentation.

16 Thank you, very much. And we have already gone
17 through the federal updates and to wrap up, you know, here
18 is the slide that is for the comment process. Comments in
19 writing are due by April 15, 2015. Submit the comments
20 electronically to the web link. You can upload the comments
21 electronically, on this web link.

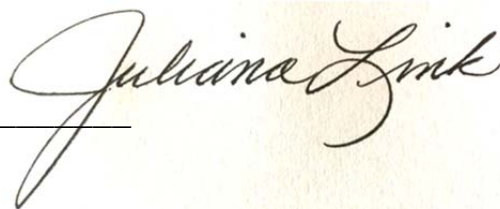
22 Or you can send a hard copy to the Energy
23 Commission Docket Mail Stop-4, Docket No. 15-AAER-1. The
24 address is 1516 Ninth Street, Sacramento, California,
25 95814-5512.

REPORTER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 30th day of March, 2015.

A handwritten signature in black ink that reads "Juliana Link". The signature is written in a cursive style and is positioned above a horizontal line that extends to the left across the page.

Juliana Link
CER-830

TRANSCRIBER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 30th day of March, 2015.



Myra Severtson
Certified Transcriber
AAERT No. CET**D-852