

## DOCKETED

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COMMITTEE HEARING  
BEFORE THE  
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA

In the matter of, )  
 ) Docket No. 16-BSTD-02  
 )  
2016 Nonresidential Lighting )  
Alteration Enforcement )

CALIFORNIA ENERGY COMMISSION  
CHARLES IMBRECHT HEARING ROOM  
1516 NINTH STREET  
SACRAMENTO, CALIFORNIA

TUESDAY, FEBRUARY 9, 2016

10:06 A.M.

Reported By:  
Peter Petty

## APPEARANCES

CEC Staff Present

Simon Lee

Peter Strait

Gabriel Taylor

Maziar Shirakh

Panelists (\*Present via WebEx)

Kelly Cunningham, PG&E

Tom Enslow, NECA/IBEW

Gene Thomas, Ecology Action

Scott Randolph, Sprig Electric

\*Wayne Wirick, City of Sonoma

Public Comment

Bernie Kotlier, NECA/IBEW

Mike Stone, NEMA

Anthony Fernandez

\*Mostafa Kashe, L.A. County

\*Behzad Eghtesady, City of Los Angeles

\*Nick

\*Tunisia Tilley, Johnson Controls

\*David Rivers, Southern California Edison

Gary McDowell, JATC, Local 340, IBEW

Bret Barrow, Politico Group

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## P R O C E E D I N G S

1  
2 FEBRUARY 9, 2016

10:06 A.M.

3 MR. LEE: Thank you for taking the time to  
4 attend this workshop. Also, thank you to those who are  
5 joining us remotely via WebEx. My name is Simon Lee. I  
6 am one of the lighting subject managers of the Building  
7 Standards Office, of California Energy Commission.

8 Also, I want to introduce others in the Building  
9 Standards Office. Peter Strait. Peter is supervisor of  
10 the Office. And Gabriel Taylor. Gabe is also the  
11 lighting subject matter expert.

12 Our office is responsible for developing and  
13 updating Building Energy Efficiency Standards, also  
14 known as Title 24, Part 6 of the Energy Code. I will  
15 briefly go through the background leading up to this  
16 workshop.

17 The Act requires the Energy Commission to  
18 develop lighting standards for existing buildings. And  
19 this is in Public Resource Code 25402. The Energy  
20 Commission has been hard at work in updating the  
21 standards for the last two years.

22 And at last, 2016 Energy Standards has been  
23 adopted and will be effective next year, on July 1st,  
24 2017.

25 This workshop is organized so that public can

1 comment on the enforcement of the Nonresidential  
2 Lighting Alteration requirements. There are two ways to  
3 submit comments. One, you can comment during the  
4 comment session here. Another way, you can submit  
5 written comments using e-File, in the Docket, really one  
6 page.

7           The instructions are shown on this line. This  
8 line will be posted on the meeting webpage this week.  
9 All comments have to be submitted by 5:00 p.m. on  
10 February 23rd. That's a Tuesday.

11           Agenda for the workshop. First, I will present  
12 some of the important elements of the 2016  
13 Nonresidential Lighting Alteration requirements. And,  
14 hopefully, this will refresh everyone's memory of the  
15 requirements.

16           Next, there will be a panel discussion. After  
17 that, the floor will be open and everyone will have a  
18 chance to comment.

19           The last item on the agenda is next steps and we  
20 will tell you what happens after this workshop.

21           The following is a housekeeping message. For  
22 those of you who are not familiar with this building,  
23 the closest restroom is located outside the glass door  
24 of this room, around the corner and to your immediate  
25 right. There is also a snack bar on the second floor,

1 under the awning.

2           Lastly, in the event of an emergency and the  
3 building is evacuated, please follow our employees to  
4 the appropriate exits. We will be convening at  
5 Roosevelt Park, located by the -- across the street from  
6 this building. Please proceed calmly and quickly, again  
7 following the employees with whom you are meeting to  
8 safely exit the building.

9           Are there any questions so far?

10           We'll get started. The 2016 Nonresidential  
11 Lighting Alteration requirements. The requirements are  
12 still in Section 141.0(b)(2), subsection I, J, K  
13 pertains to indoor lighting alterations. Subsection L  
14 pertains to outdoor lighting alterations.

15           In 2016 Standards, there is a new compliance  
16 option added for those alterations, with significant  
17 lighting power reduction compared to existing lighting  
18 system. This new option is for office, retail, hotels  
19 with at least 50 percent of lighting power reduction.

20           This new option is also available for other  
21 occupancies with at least 35 percent of lighting power  
22 reduction.

23           The language and exceptions have been clarified  
24 in 2016 Standards. Existing exceptions in 2013, such as  
25 for asbestos, are more clearly worded and otherwise

1 remain the same.

2           Some of you may remember there are two lighting  
3 alteration tables in 2013 Standards, Table E and Table  
4 F. In 2016 it has been clarified and there is just one  
5 table, Table E, for the entire alterations.

6           On acceptance testing, there is an exception for  
7 projects with added controls for fewer than 20  
8 millimeters. That means for small projects no  
9 acceptance test is required.

10           These are my highlights of some of the 2016  
11 changes. Next, I will go in the subject area of indoor  
12 lighting alterations.

13           There are some pictures on the screen. Can you  
14 tell how they are related to the standards? There are  
15 three main lighting alteration scenarios that they are  
16 addressed by the standards. Entire luminary  
17 alterations, luminaire component modifications and  
18 lighting wiring alterations.

19           So, the first scenario I want to look at is  
20 entire luminary alterations. This applies to alteration  
21 with a scope to remove and reinstall light fixtures or  
22 to replace existing fixtures with new. Or, it could  
23 involve a complete redesign of the lighting system.

24           The second scenario, lighting component  
25 modifications. It applies to where there are

1 modifications of light fixtures, such as replacing both  
2 lamps and opticals with more energy efficient light  
3 source. This is about permanently changing the light  
4 source or the optical system.

5           There is a threshold for these options,  
6 scenarios here. The threshold is about the community of  
7 fixtures. If there's 70 or more fixtures, all the  
8 fixtures on any one floor of a building, it should go to  
9 code. For a multi-tenant building, if more than one  
10 tenant is on the same floor of the building, then it's  
11 specific to the tenant.

12           Here's an example. For a street mall with  
13 multiple shops and tenants, a tenant updating his  
14 lighting at one end of the mall won't count against a  
15 different tenant.

16           And then the other scenario, lighting wiring  
17 alternations. It has to do with wiring. Some examples  
18 are bulb replacement, adding a lighting control panel,  
19 or adding a lighting circuit. These are examples for  
20 lighting wiring alterations.

21           The picture on the screen shows a worker  
22 standing in front of a (inaudible) -- so this worker may  
23 very well be adding a new lighting circuit, and that's  
24 the lighting wiring alterations.

25           (Inaudible) -- in a nutshell there are two.

1 First is to meet the lighting power method, second is to  
2 provide lighting control functionality.

3 And let's look at entire luminary alteration  
4 again. There are three options allowed for lighting  
5 power level or lighting power reduction.

6 The first option, for new lighting power level  
7 in the range of no more than -- actually, more than 85  
8 percent or 100 percent of lighting power allowance  
9 specified in Section 140.6 of Area Category.

10 One way to remember this is that the new  
11 lighting power is the same or almost the same as the  
12 current standards lighting power allowance.

13 And the second option, the new lighting power  
14 level is at 85 percent or less of lighting power  
15 allowance. And in 2016, there's a new option. Lighting  
16 power reduction by 50 or 35 percent compared to existing  
17 lighting system that's allowed.

18 And this new option is for -- so, the 50 percent  
19 is for office, retail and hotels. And for all other  
20 occupancies, it's at least 35 percent of reduction.  
21 These three options are also available for luminaire  
22 component modifications.

23 So, how is lighting power related to controls?  
24 We have a table here that shows the relationship between  
25 the two, lighting power, controls. The column on the

1 far left, it lists the different control types, Section  
2 130.1 area on/off by lighting controls. So these  
3 different control types are in the column on the far  
4 left.

5 Other columns of the table show what controls  
6 are required depending on the three options that I just  
7 mentioned of the installed lighting control. For the  
8 new option of lighting power reduction by 35 and 50  
9 percent, look for the second column from the left. This  
10 second column shows the control requirements. For this  
11 option of reduction by 35 and 50 percent, only area  
12 on/off and shutoff controls are required.

13 And then moving on to the next column, the next  
14 column is for lighting control level at 85 percent or  
15 less. So you can see there is more requirements, more  
16 control requirements.

17 And then the column on the far left is for  
18 lighting power level in the range of more than 85  
19 percent to 100 percent.

20 I want to go back and talk about lighting wiring  
21 alterations. The alteration has to meet lighting power  
22 allowance of Section 140.6. It also has to meet certain  
23 control requirements of area, on/off controls and others  
24 indicated in this section.

25 And we have -- I have two example projects.

1 Just want to get us thinking about the different kinds  
2 of projects that the regulations have to cover. So, on  
3 the screen it shows a project is a house lighting  
4 operation. The scope is to replace all high lighting  
5 fixtures with new LED lighting fixtures. And this is an  
6 entire luminaire alterations because it's one-for-one  
7 replacement.

8           And then the picture on the screen shows the new  
9 area fixture. And that's as I have mentioned earlier,  
10 there are two components goes, lighting power and  
11 control functionality. And this project has some good  
12 lighting power reduction, more than 50 percent.

13           Under the 2016 standards, for more than 50  
14 percent of lighting power reduction only area on/off and  
15 shutoff controls are required.

16           And another example project is an office  
17 lighting alteration. This is a very different project  
18 type. All existing fixtures stay in place, but the  
19 lamps and ballast are being replaced by T-8 lamps and  
20 new electronic ballast. So, this is luminaire  
21 modification alteration. And like the first project,  
22 there is some good lighting power reduction, more than  
23 50 percent.

24           So this table here shows that they are more than  
25 50 percent of lighting power reduction compared to

1 existing system. And, therefore, only on/off and  
2 shutoff controls are required.

3           And let's go through the outdoor lighting  
4 alteration requirements. For outdoor lighting  
5 alterations that either increase lighting power or at  
6 least -- include at least half of the existing  
7 luminaires, then it has to meet lighting power allowance  
8 and also control requirements.

9           Outdoor lighting power allowance is in Section  
10 140.7 and outdoor control requirements are in Section  
11 130.2.

12           The requirements for outdoor lighting  
13 alterations, with increased lighting power and half of  
14 the existing luminaires are being altered are treated  
15 like new construction. However, there is an exception  
16 similar to indoor lighting. If you reduce the installed  
17 lighting power by at least 40 percent, that this is  
18 considered to meeting the lighting power allowance and  
19 you don't have to calculate the lighting power of the  
20 space.

21           What about if there's no increase in lighting  
22 power? When there is no increase of lighting power and  
23 less than the installing -- or less than half of the  
24 installing is altered, there is no lighting power  
25 allowance required for such alterations.

1           And then let's talk about controls. The control  
2 requirements depend on the quantity of luminaires being  
3 altered. Less than five luminaires or less than 10  
4 percent of the number of existing luminaires, whichever  
5 is larger, does not trigger control requirements.

6           What about when there are more luminaires being  
7 altered? So, when there are five or more, and 10  
8 percent or more of existing luminaires being altered,  
9 then it triggers control requirements.

10           So, that's all, in a nutshell, the outdoor  
11 lighting alteration requirements.

12           And again, I want to show you some example  
13 projects for outdoor lighting alterations. This is for  
14 a parking lot. All existing parking lot fixtures are  
15 replaced with new LED fixtures. And this is a  
16 replacement, a total of 46 fixtures are replaced. And  
17 these fixtures are mounted at greater than 24 feet.

18           Earlier I mentioned an exception for these 40  
19 percent of lighting power reduction compared to  
20 existing. And so this project has achieved more than 40  
21 percent of lighting power reduction and, therefore, the  
22 lighting power allowance requirement is exempt from this  
23 project.

24           And for control functionality, there is a time  
25 control system for the entire lighting system and there

1 are also motion sensor being put in for each light  
2 fixtures. So, that's all the details for this outdoor  
3 lighting exemption. And also completes my recap on the  
4 outdoor alteration requirements.

5 Are there any questions on the requirements?

6 MR. STRAIT: For those that are listening  
7 remotely, if you have a question, simply click the raise  
8 your hand button and we can unmute you.

9 All right, there are a few call-in users that  
10 aren't associated with accounts, so I'm going to unmute  
11 them really quick and we'll see if any of them have any  
12 questions.

13 Okay, I am not hearing any questions from the  
14 online participants.

15 MR. LEE: Okay, there's no questions. And so,  
16 we're going to the next session, the panel discussion.

17 We have invited a group of panelists and related  
18 to lighting alterations. I would like to ask our  
19 panelists to introduce themselves and say a couple of  
20 sentences about what they do. And maybe start it, maybe  
21 with Kelly.

22 MS. CUNNINGHAM: Hello, I'm Kelly Cunningham  
23 with PG&E. And I work on the Codes and Standards  
24 Compliance Improvement Team. So, here today to give  
25 input.

1           MR. THOMAS: I'm Gene Thomas with Ecology  
2 Action. I'm a Senior Energy Analyst. I've done quite a  
3 bit of work with the Codes and Standards team here, at  
4 the CEC. To give an implementer's perspective, we're a  
5 nonprofit that has a lot of energy efficiency projects  
6 for IOUs, like PG&E, POU's, and lighting is a big part of  
7 what we do. So, we try to make sure that the  
8 implementer perspective is represented and that it works  
9 towards streamlining and avoiding of any kind of  
10 stranded savings.

11           MR. ENSLOW: Tom Enslow, I represent -- I'm here  
12 today representing the IBEW, the International  
13 Brotherhood of Electrical Workers, and NECA, the  
14 National Electrical Contractors Association's LMCC,  
15 that's Labor Management Cooperation Committee.

16           My firm also represents the sheet metal workers  
17 and the plumbers. And all three of these groups have  
18 long been at the forefront of pushing for energy  
19 efficiency and water efficiency in the State, even well  
20 before any Commission was around.

21           And most recently we've been involved in updates  
22 to the 2016 Code and I've listed a number of concerns  
23 about the proposed -- well, the now-adopted pathway  
24 where, you know, board advanced controls if you reduce  
25 your energy savings by 35 to 50 percent from the

1 original lighting fixtures. The concerns, you know,  
2 were twofold. One was about automated demand response  
3 and anything that, you know, without advanced controls  
4 you can't do that. And we've been pushing for increased  
5 renewable energy in the State, through SB 350, and we  
6 feel that it goes away from that direction by allowing  
7 existing buildings to do updates without doing advanced  
8 controls.

9 But on this particular issue, we've had issues  
10 with enforcement and that's what we're going to discuss  
11 today.

12 MR. RANDOLPH: Good morning, my name's Scott  
13 Randolph. I'll take a second to introduce myself  
14 because I'm in a very unique situation. I work for a  
15 company called Sprig Electric, out of San Jose,  
16 California. I am a member of the Engineering Team. I'm  
17 primarily responsible for Title 24 and code compliance.

18 I also teach at the JATC as an electrical  
19 instructor in the apprenticeship program. And I am  
20 under contract with the City of San Jose as a building  
21 inspector. So, I wear multiple hats depending on what  
22 time of day I happen to be and where I happen to be  
23 sitting.

24 So, I have a rather different perspective,  
25 maybe, than some of you have. Because of the multi hats

1 I wear, I have a different perspective of how things  
2 should look and how we actually look at things in the  
3 field as an inspector, also.

4 MR. TAYLOR: Good morning, my name is Gabriel  
5 Taylor. I'm with the California Energy Commission, the  
6 Building Standards Development Office staff. And I'm a  
7 lighting and subject matter expert, along with Simon  
8 Lee.

9 MR. STRAIT: We also have one panelist that's  
10 attending remotely. Wayne, can you introduce yourself?

11 MR. WIRICK: Sure. My name's Wayne Wirick. I'm  
12 with the City of Sonoma. We're a small jurisdiction up  
13 in Sonoma County. And I'm here to just understand what  
14 the changes are and also provide a perspective with  
15 respect to the challenges that we're seeing with respect  
16 to enforcement.

17 MR. STRAIT: Thank you.

18 MR. LEE: So, thank you all panelists willing to  
19 speak here.

20 We also want to get to know everyone here in the  
21 room, so can we have a quick show of hands, do we have  
22 anyone from IOU Incentive Programs?

23 Do we have anyone from lighting retrofit,  
24 electrical contractor industry?

25 And do we have any building officials here?

1 Anyone from building management, facility operations, or  
2 someone who may be out for the moment? Okay.

3 MR. KOTLIER: You may have some of those people  
4 on the phone.

5 MR. STRAIT: I'm looking. We have one person  
6 raised their hand and two -- oh, we have two people that  
7 raised their hand, so that was it. You do have to be  
8 pretty quick on that button, I apologize.

9 I don't know, do you want to go through the list a  
10 second time so the people on the line can have a chance  
11 to raise their hand?

12 MR. TAYLOR: Just have them talk.

13 MR. LEE: Yeah, sure. Maybe I will go through  
14 it one more time. This is for those folks who are  
15 joining us remotely. Can we have a quick show of hands  
16 how many building officials, building department staff?

17 MR. STRAIT: Okay, just click the raise your  
18 hand button if you are a building official. I'm  
19 counting, one, two, three, four, five six. Six on the  
20 online attendees are in that group.

21 MR. LEE: Okay, great. Thank you.

22 How about anyone from IOU or IOU incentive  
23 programs joining us online.

24 MR. STRAIT: All right, let's give folks a  
25 chance to click the button.

1 MS. CUNNINGHAM: Simon?

2 MR. LEE: Yeah?

3 MS. CUNNINGHAM: I am working with the program  
4 team after today with information follow up. So,  
5 whatever we decide to do today in terms of bringing  
6 together a team, then they're waiting for me to report  
7 back, so their set as well.

8 MR. TAYLOR: You've got a hand.

9 MR. STRAIT: It looks like we do have one hand  
10 that was raised online, so we've got one other attendee  
11 that's part of that group.

12 MR. LEE: Okay. And next, do we have any  
13 lighting retrofitters, electrical contractors joining us  
14 online?

15 MR. STRAIT: I'm not seeing any raised hands for  
16 that group.

17 MR. LEE: Okay. And lastly, anyone from  
18 building management, facility operations or anybody who  
19 is a building owner joining us online?

20 MR. STRAIT: I'm not seeing any raised hands for  
21 that group.

22 MR. LEE: Okay, maybe next time.

23 So, with that, thanks everyone for coming here.  
24 So, we'll start having discussions.

25 Our objective here is to discuss enforcement of

1 lighting alteration requirements. And so, I will pass  
2 on for all questions. So, for lighting alternation  
3 permit or project, there is a before and after  
4 condition. What is the common practice and what do you  
5 think will be appropriate and sufficient to verify the  
6 existing condition and put power to the lighting  
7 alteration or power to the (inaudible) begin?

8 MS. CUNNINGHAM: How would you like us to -- are  
9 we going to go around or --

10 MR. STRAIT: Yeah, we can start at this end of  
11 the table and work our way around.

12 MR. LEE: Yeah, we can have a go around here.

13 MS. CUNNINGHAM: Okay, then an exchange of  
14 conversation naturally occurs.

15 MR. LEE: Yeah, it's not like we do formal so  
16 it's --

17 MS. CUNNINGHAM: Sounds good. Well, I can begin  
18 a little bit in that, you know, PG&E and the IOUs have  
19 different types of projects, different types of program.  
20 So, one of the things that I've collected for today, we  
21 have custom programs, we have direct install programs,  
22 we have deemed programs, and then we do a lot of work  
23 with our implementers.

24 And with Gene here to my left, I won't speak too  
25 much to the implementers because he will be addressing

1 those.

2           But for custom projects, for example, we will  
3 always have a field engineer go to do a site visit as  
4 the project starts, and take documentation, notes and  
5 photographs to put together a report to say what's out  
6 there.

7           In terms of some of the other projects, then  
8 PG&E may not be the one to verify those existing  
9 conditions. For example, for deemed measures. So it  
10 assumes that existing conditions meet the code and as  
11 described, so we won't be sending an engineer to do that  
12 on-site documentation.

13           What types of documentation depends on the size  
14 and scale of the project. And I've asked for some  
15 information to support me for today on what's  
16 photographed, and at least one of every type of  
17 luminaire that's going to be involved in the project is  
18 photographed and captured. And the report type that is  
19 generated is going to vary a bit depending on, you know,  
20 are we talking about a whole building or just a small  
21 project.

22           And then, also, there is some play in terms of  
23 how much work goes into this report depending on the  
24 savings that's going to be delivered after that project  
25 is complete.

1           So, it would be really great if I could say  
2 here's a matrix and an exact formula for today, but it's  
3 also about assessing that particular project and then  
4 going from there.

5           So, across those three different types there is  
6 some variance. But we could start with just saying  
7 there is going to be photographic evidence, there is  
8 going to be notes and there is going to be an engineer  
9 who surveys, for custom projects, what exactly we see in  
10 the ceiling to start.

11           MR. TAYLOR: This is Gene Thomas, Ecology  
12 Action. And, you know, PG&E's probably our largest  
13 client for -- we have a variety of different programs  
14 both, you know, more broad, direct install programs and  
15 targeted market programs.

16           And for lighting we use what's called a modified  
17 lighting calculator. They're still considered custom  
18 projects but they -- we take the existing and new  
19 wattages, we take actual hours of operation that we get  
20 from the building owner and then we use that for a  
21 payback calculation. And then we use deemed hours of  
22 operation from DEER and DEER interactive factors, and  
23 with those pre- and post-wattages apply those. And  
24 that's the reportable savings that we get for the  
25 program that we report to PG&E, and our other utility

1 clients.

2           And as Kelly said, there's a variety of  
3 different things we do to document that. We supply the  
4 customer with basically a work order, and a similar and  
5 maybe a little more detailed one for the installation  
6 contractor. And it describes what we're putting in,  
7 where we're putting in savings for each one, the payback  
8 calculations, total project costs, rebate and out-of-  
9 pocket. And provide that to the customer and that's  
10 what they look at to sign off on whether they want to  
11 proceed with the project or not. A more detailed  
12 version of that goes to the installation contractor.

13           And then we do the project. Once it's complete  
14 and inspected, then we report to PG&E and that's got a  
15 more detailed kind of spread sheet that we provide with  
16 them. And we can look at that momentarily. But that  
17 has a real detailed description of the existing fixture  
18 type, wattage, both the nominal wattage and the system  
19 wattage, number of existing fixtures that are being  
20 altered or replaced, the location of that, the room or  
21 area. And then the description of the new fixture  
22 wattages, system wattages, the number of.

23           And then you can see the delta wattage  
24 difference. That's something that we added for the  
25 example that we'll show. But you can easily be able to

1 see what that wattage percentage is for both any given  
2 fixture and then the one that really applies, the delta  
3 wattage for the area.

4           And in addition to that we do provide some  
5 photographic evidence of the existing fixture or lamp  
6 type. Not a picture of every single light bulb and so  
7 forth, just of the representative types. And they  
8 didn't show up that well in some of the ones that were  
9 displayed earlier but, you know, for ballasts you have  
10 to be able to see the ballast type, and the power  
11 factor, and all that. For the lamp you have to see the  
12 wattage.

13           And those are not customarily done for, let's  
14 say we're doing lamp replacements where we make a pile  
15 on the ground of 200 metal halide lamps that we're  
16 replacing because that's just -- it's not feasible to do  
17 that in the real world. Because as the contractors are  
18 removing the lamps, let's say they're removing T-12s or  
19 first gen T-8s, those normally go in a recycling barrel  
20 which may already be half full from the last job that  
21 they did. When they fill that up, then the recycler  
22 comes and picks it up. The same with the ballast.

23           So, the only thing where you'll see like a pile  
24 of removed fixtures of a particular type is when we're  
25 doing a whole fixture replacement because then you have

1 to take the whole fixture down and set it there. It's  
2 easy enough to take a picture.

3 But for the kind of discrete lamps that we would  
4 remove, or ballasts, those are typically one  
5 representative picture of each type. And so, that all  
6 goes into a documentation file that we send some of to  
7 PG&E, and the rest of it we retain, and they can call on  
8 us to provide that additional documentation that they  
9 deem necessary.

10 One thing, though, is typically our experience  
11 and that of other implementers like us is even though  
12 this modified lighting calculator is considered --  
13 they're considered custom projects, as opposed to being  
14 strictly deemed widget-based projects, there's not  
15 typically an inspection done ahead of time by the  
16 building department. And seldom, if ever that I've  
17 known about, is there one.

18 So, we thought it most -- and some of the panel  
19 members here can speak to that. But typically building  
20 departments don't have the bandwidth to go out and count  
21 lights, and so forth, at typical small, medium lighting  
22 projects. They're concentrating their resources on new  
23 construction, major gut rehabs and so forth.

24 So, typically the utility -- and that's the  
25 other part of the equation is that typically rebates,

1 incentives are part of the picture for implementers, and  
2 for a lot of these projects that go forward, especially  
3 in the small, medium business market. And so, we have  
4 to provide, we have to give PG&E, and other utility  
5 clients the comfort level that the savings that we're  
6 claiming is real.

7           And so it doesn't represent a huge burden and  
8 much of this work we're already doing, so it's not like  
9 we're having to devote a lot of extra manpower to go out  
10 and try to do things that aren't part of the normal  
11 course of business. So, that kind of goes in line with  
12 the whole mindset of trying to make this as simple,  
13 straight forward, inexpensive, doable for all the  
14 players that are involved.

15           Gene, we do have one question from one of the  
16 (inaudible) -- they're asking, does your project package  
17 include project cut sheets of new project price  
18 involved?

19           MR. THOMAS: So new projects typically, yes.  
20 But we don't try to dig up cut sheets for old, for the  
21 existing stuff that's already there.

22           MR. LEE: So, those other cut sheets include --  
23 can include the light fixtures and some other --

24           MR. THOMAS: Yeah, it will be whichever  
25 technology or installing. It will be, you know,

1 photometrics and all of the things that you would  
2 typically find in a cut sheet that -- you know, at some  
3 point you might think it's redundant when you're doing  
4 this particular LED fixture that you're doing a million  
5 of to provide cut sheets, but we just download them,  
6 typically, and you've got them on hand. And you kind of  
7 have to manage them a little bit as the part numbers and  
8 stuff evolve. But that's all part of the process  
9 management that implementers do behind the scenes to  
10 give utilities the documentation they need.

11 MR. LEE: Okay, so you find the -- so, those cut  
12 sheets are part of the package that's required by the  
13 rebate program.

14 MR. THOMAS: Required to be made available.  
15 And, Kelly, you might speak to this. But they may not  
16 be required to be submitted on each and every project.  
17 So, if we're doing a thousand projects a year, we may  
18 not be required to submit cut sheets on all of those.  
19 We may be required to submit them on any new technology,  
20 or new part number, or whatever. Actually, that I don't  
21 have the exact detail on. But it's whatever we're  
22 required to submit by the utility.

23 And whether we are required to submit it  
24 physically or electronically with each project, we are  
25 required to have it on hand.

1 MR. LEE: Okay, thank you.

2 MR. ENSLOW: This is Tom Enslow, on behalf of  
3 IBEW/NECA LMCC. I think our focus is a little different  
4 and I think it's really interesting hearing some of the  
5 best practices that -- and maybe I'm going, when you get  
6 into these rebate programs and PG&E.

7 But our overall concern has really been more of  
8 the lower common denominator, which is actually the more  
9 common practice, where we see that these installations  
10 of lighting systems, and the same as with HVAC systems,  
11 that the vast majority of them or a large percentage of  
12 them aren't working as designed, or there are  
13 installation errors, or design errors, or changes in  
14 products, you know, at the scene.

15 And so, you know, the concern is for the average  
16 nonresidential project what's going to be required, not  
17 what is the best practice of the best players. And so,  
18 I think that's really our focus.

19 And on top of that I'd say another big picture,  
20 what we've long supported and we think is what works for  
21 these average projects is acceptance testing.  
22 Acceptance testing, you know, provides a level of  
23 enforcement verification that the electrical inspectors  
24 just don't have the manpower, you know, to do. But, you  
25 know, it's easier for them to determine that the

1 acceptance tests have been done.

2           And I think it's been very effective. And now  
3 that we're requiring certified acceptance testers -- and  
4 we're still seeing on the HVAC side uncertified  
5 acceptance testing that just isn't really happening or  
6 isn't really that useful. So, you know, the process  
7 we've now developed for lighting and electrical systems,  
8 with acceptance testing, is very important.

9           The concern is that that's only required for  
10 advanced controls right now, or for controls, and which  
11 is important. But when we have, you know, this new  
12 pathway to avoid advanced controls saying that you  
13 reduce your power consumption by 35 to 50 percent, you  
14 know, depending on the type of occupancy, there's no --  
15 currently, there's no acceptance testing, or photo  
16 requirement, or any other sort of verification  
17 requirement to confirm that you've actually met that  
18 reduction.

19           And part of the issue is, again, this is  
20 something that's going to require a baseline  
21 confirmation. You know, that's the -- which you don't  
22 have with any of the other requirements for alterations  
23 and modifications. There's a baseline required to know  
24 where did you start with, it's all about, you know,  
25 where have you ended up.

1           And so, it's really important that you do have  
2 initial verification of the model numbers on the lamps  
3 and ballasts of the existing lighting system, and the  
4 cut sheets. You need to know the power consumption of  
5 these original systems, you know, by reference to their  
6 specifications. And then you have to calculate the  
7 power consumption, compare it with the new installation,  
8 and calculate those savings.

9           And there's some competency involved in there of  
10 doing those calculations, making sure you're using the  
11 right model numbers, and the right sheets. And there's  
12 a lot of areas there for errors, both accidentally and  
13 deliberately.

14           You know, the concern is that -- you know,  
15 unfortunately, we know in the long term people should be  
16 looking at long-term savings, but the short-term costs  
17 are what drive building owners. And so, if there's an  
18 opportunity to avoid more expensive controls by fudging  
19 on how much savings you're going to have, that's going  
20 to occur and that's going to be commonplace.

21           And so, you know, we're of the opinion that you  
22 need acceptance testing for this power consumption  
23 reduction path. You need someone to go in and verify,  
24 pre-installation and post-installation, what are these  
25 model numbers, you know, verify the calculations, verify

1 the prior specs. It shouldn't be a lot of work. It  
2 should be you're already going to have acceptance  
3 testing for the error controls and occupancy controls,  
4 so you're not sending anyone new out there. But this  
5 needs to be part of that package if it's going to be  
6 meaningful.

7 MR. THOMAS: Tom, I'm confused. It sounds like  
8 you're kind of rehashing what's already been accepted as  
9 the 2016 Code. So, I thought we were kind of moving  
10 towards finding out the most efficient way of  
11 documenting that for a compliance stand point going  
12 forward.

13 So right now there is an exception for 20 or  
14 fewer luminaire controls that are added, that don't  
15 require acceptance testing. So, that's the world that  
16 we'll be living in, you know, coming up.

17 And I don't think it really requires any great  
18 computational skills to take -- when you take down a 40-  
19 watt T-12, with a standard magnetic ballast, that  
20 there's still plenty of them out there, to do the simple  
21 subtraction of the starting wattage of that, and the  
22 number of fixtures. And then the new wattage from the  
23 cut sheets, the number of fixtures. It's just  
24 arithmetic.

25 So, the other thing I'd want to point out, too,

1 any system, any code can be cheated on by somebody who  
2 really wants to cheat. And that includes the 2013 Code.  
3 That includes doing computation of lighting power  
4 allowances. When the building official looks at that  
5 compliance form and sees here's the computed lighting  
6 power allowance that you have, here's what you say you  
7 have based on what you installed, all of that is not  
8 being checked on the ground. And to the level that  
9 you're talking about, it's just not practical to do that  
10 for existing retrofits, unless you want to bring the  
11 market to a screeching halt.

12           So, it's not like having to measure square  
13 footage and do lighting power calculations, it's just  
14 simple math. We have to try to keep that in mind.

15           MR. ENSLOW: Well, I agree with you, I don't  
16 think it is complicated. But I think that enforcement  
17 is critical. You know, I mean, we know what's in the  
18 code. And the issue is how do we enforce it and make  
19 sure that we're not losing energy savings, we're not  
20 losing 80-R opportunities, and not getting energy  
21 savings that people are claiming.

22           And the way to do that is to require  
23 verification. And, you know, as you both spoke to, best  
24 practices where people are taking photos of what's there  
25 beforehand and what's after, showing the model numbers

1 that's part of what is key.

2           And we already have the acceptance testing  
3 system set up. We already have acceptance testers going  
4 out there to do verification on the controls that are  
5 still required. You know, and I recognize there's some  
6 acceptance for acceptance testing that can probably  
7 still apply for these very small projects.

8           But we're talking about projects that could be,  
9 you know, thousands of luminaires. And, yeah, I think  
10 it is important that we make sure that people are  
11 avoiding, you know, controls that are being acceptance  
12 testing. I mean, if we're going to verify the savings  
13 for that sort of work, we should also be verifying  
14 savings for this sort of work.

15           MS. CUNNINGHAM: So, I hear you saying that  
16 you're proposing a person, an acceptance test to verify  
17 for these projects that use this pathway. And then, to  
18 kind of sum up what Gene and I are saying, of the things  
19 that we already do, should that not prove cost effective  
20 or possible is we at least want to make sure that there  
21 is calculations of before and after in terms of wattage  
22 reduction, some type of documentation, an equipment list  
23 or schedule, some photos or some spec sheets that are  
24 available, and how many of those and for what process.  
25 For the Commission, they'll hear, and listen, and

1 decide.

2 But what you're asking is maybe there should be  
3 a person involved, too, is what I hear. And maybe our  
4 next guest will be able to also speak to, you know, what  
5 that would mean on the inspection side and the timeline  
6 that would require.

7 MR. STRAIT: We do have one request from a  
8 panelist. There's a person on the phone, Mike Stone has  
9 a limited availability and he wanted to speak briefly.  
10 One of the panelists had asked that we give him some  
11 time to do so. So, I'm going to unmute him so that he  
12 can speak.

13 Mike Stone, you're line is unmuted.

14 MR. STONE: Yes, can you hear me okay?

15 MR. STRAIT: Yes, we can hear you.

16 MR. STONE: Yes, I'm going to add to what Tom  
17 was mentioning there. Yeah, I'm with the National  
18 Manufacturers Association, so our manufacturing members  
19 pretty much make all of the luminaires, and the lamps,  
20 and the ballasts, and everything else, and controls as  
21 well, because most of those manufacturers are NEMA  
22 members.

23 You know, NEMA covers 11 states, so just a  
24 little bit of perspective outside of California. One of  
25 the main complaints that we hear regarding the energy

1 codes that are in place in different states is that  
2 they're generally not enforced, like they are in  
3 California. We have a very strong enforcement program  
4 here. And it's really an opportunity for people to take  
5 advantage of loopholes and items that are not -- you  
6 know, that don't get inspected to take the contractors,  
7 or the installer, or property owner, to take their word  
8 for it. You know, most people are pretty honest, but  
9 there's quite a few that aren't.

10           And one of the biggest complaints is that  
11 enforcing certain rules are -- they're getting away with  
12 it and there's no enforcement mechanism, and there's a  
13 lot of energy savings that are not being realized  
14 because of that.

15           And just in particular, lighting retrofit  
16 exception, it's really not going to be enforceable.  
17 There's really no way to, without somebody going out  
18 there and counting fixture, personally, and enforcing  
19 these provisions, there's really just no way that  
20 they're going to get enforced.

21           So, anyway, I guess I don't want to repeat what  
22 some of your other panelists are saying, but just a  
23 little bit along the line of Mr. Enslow, what he just  
24 brought forth, I'm in agreement with that.

25           MR. STRAIT: Okay, thank you.

1 MR. STONE: Sure.

2 MR. STRAIT: I'm sorry, do you still have -- I  
3 was about to mute your line. Do you still have more to  
4 say?

5 MR. STONE: No, no, I just said I'm going to  
6 stick around for a while longer and I'll raise my hand  
7 if I have some more to say.

8 MR. STRAIT: Okay. Well, we'll keep an eye out  
9 for that.

10 Generally, other comments and questions that are  
11 going to come from non-panelists, we're going to wait  
12 until after the panel discussion to open the floor. But  
13 for anyone that's time limited or needs to speak, let me  
14 know and I can ask the panelists if they want to  
15 accommodate. And you can do so using the chat box, if  
16 you're attending remotely.

17 MR. RANDOLPH: Scott Randolph. As I said  
18 earlier, I come from an interesting perspective, a  
19 unique perspective probably than everyone here. I don't  
20 pretend to speak for a jurisdiction like Sonoma. San  
21 Jose, the City of San Jose is the third largest city in  
22 California, with over one million occupants, 1.1  
23 million.

24 We are in rather a unique situation. The  
25 building department is perpetually understaffed. The

1 only way that an inspector can go out to a job and  
2 verify that the lighting controls have been installed  
3 correctly and with the full functionality required by  
4 CALCTP and by Title 24, is through the use of the  
5 acceptance test documentation.

6           Because of also my job in working with the  
7 Engineering Department for Electrical Contractors, Sprig  
8 Electric, we will do approximately -- we will do over a  
9 quarter of a billion dollars in electrical work this  
10 year. We're a big company. We have between 700 and 800  
11 employees. We work in all of the 109 jurisdictions in  
12 the Bay Area.

13           I wanted to say that 109 because in my role as  
14 Title 24 Code compliance, I have to deal with any of the  
15 109 jurisdictions in which we are presently doing jobs.  
16 That involves various levels of training and knowledge  
17 of the Title 24 standards in every one of the 109  
18 jurisdictions.

19           I also do some Title 24 training. I've been  
20 asked to train at several jurisdictions as far as Title  
21 24. I did a training in PG&E, in their office in San  
22 Francisco, just in the last month with their Facilities  
23 Group, to talk about Title 24 and the requirements.  
24 Because the difficulties their facing with even their  
25 retrofits in their own buildings, as an inspector,

1 without the compliance documentation there is absolutely  
2 no way I would have time to go out and verify. Whether  
3 the fixtures have been changed 35 to 50 percent, it  
4 doesn't matter. I'm completely reliant on the  
5 acceptance test documentation.

6 I would imagine smaller jurisdictions have that  
7 even more so.

8 And what I would say to the Energy Commission is  
9 that we have an interesting situation in California in  
10 that the lighting has a compliance program, through  
11 CALCTP, through the acceptance test program, where you  
12 can document the compliance and the method, and how much  
13 of the job is actually being complied and a percentage  
14 of compliance.

15 As opposed to the mechanical side, which is  
16 still self-certified as of today, as far as I know, it  
17 was yesterday. And what the compliance figures look  
18 like for the mechanical side? Are they compliant? Do  
19 they have the same level of compliance as the lighting  
20 side does, because they are still self-certifying.

21 I'm not going to blast them too much. As a  
22 contractor, we have done approximately 150 to 200  
23 projects in the last 18 months, all of which meet Title  
24 24 requirements. In those 150-plus projects that we  
25 have done, we have not had one project where the

1 mechanical contractor has asked to go alongside of us in  
2 using our controls to control the mechanical aspects of  
3 their job.

4 That means that either the customer is paying  
5 for double levels of control, and I'm referring  
6 specifically to things like VAV control, office control,  
7 things like that. Either the customer is paying for two  
8 levels of control or one of the contractors isn't doing  
9 it.

10 Now, I know we're doing it because I see the  
11 documents and I do the paperwork. It would be  
12 interesting to see what the level of compliance is  
13 through the mechanical aspects. They do not have a  
14 certification process.

15 We're talking about opening up an area, 35 to 50  
16 percent of this huge -- that's going to be a fairly good  
17 side chunk to no compliance testing. The jurisdiction  
18 will not have time to go out and do a preliminary.

19 It's great that PG&E and that Gene, these guys  
20 do that. The percentage of jobs that they actually go  
21 out and do, I'll speak from personal experience, I do  
22 not know of one job that we have done where we have  
23 worked with PG&E, or with Gene's group in order to  
24 comply with their incentive programs.

25 I'm not going to say it hasn't happened. It

1 could happen in a different avenue of where I'm at, but  
2 I don't see that.

3 MS. CUNNINGHAM: Well, our role here today is to  
4 try and provide some tools and resources on the projects  
5 that we do touch and then, hopefully, those can result  
6 in an effective process for documentation so that people  
7 are motivated to comply, and that it becomes effective  
8 fodder for the development process of an easy-to-use and  
9 efficient tool.

10 MR. RANDOLPH: Yeah, and I have no problem. I  
11 think, boy, if PG&E's going to give me money, I'll  
12 certainly take it. If they're going to pay for my  
13 lighting upgrade, I would encourage you all to do that.  
14 If you're a building owner, why would you not?

15 But on the other hand, if you're an inspector or  
16 anything else like that, the compliance testing, the  
17 acceptance testing is critical. You can't just let it  
18 go, all just self-certify.

19 As someone who reviews -- I've worked for the  
20 City of San Jose as a contract, as a checker, I've  
21 reviewed several hundred projects in the last three and  
22 a half years. They can't get the paperwork right, yet,  
23 on what they have, when all the documentation's in front  
24 of them.

25 I hesitate, I dread to see what's going to

1 happen when we say, by the way, if you can show a 35 to  
2 50 percent savings, no acceptance test, how will an  
3 inspector, how will anyone document that? Your  
4 projects, yes, you document that, but your projects are  
5 such a small percentage of what the work does as a  
6 general rule. Admittedly, limited -- I admit, I'm  
7 limited to the 109 Bay Area jurisdictions. We do not  
8 work out of that area. But how will we ever document  
9 that without acceptance testing?

10 MR. LEE: So, can I ask you --

11 MR. STRAIT: I'd like to make one clarification,  
12 just to keep in mind.

13 MR. LEE: Sure.

14 MR. STRAIT: The acceptance to acceptance  
15 testing is for projects with 20 or fewer luminaires.  
16 So, that the project with more than 20 luminaires  
17 included would still be subject to all the acceptance  
18 testing that would normally be involved when those are  
19 being installed.

20 MR. RANDOLPH: Even with the 30 to 50 percent  
21 savings?

22 MR. STRAIT: Yes.

23 MR. RANDOLPH: Okay.

24 MR. THOMAS: And to clarify, when you say you've  
25 been relying on the acceptance testing for your

1 verification because of your manpower constraints, I  
2 assume you're meaning compliance documentation and  
3 acceptance testing. Because there are projects that get  
4 installed that don't require an acceptance tester. No  
5 additional controls were installed and so, at that  
6 point, you don't have an acceptance tester to go out and  
7 test controls, you just have the rest of the compliance  
8 paperwork. And I assume you're referring to both of  
9 those cases.

10 MR. RANDOLPH: You could say that. But if you  
11 have a jurisdiction, such as San Francisco, every job in  
12 San Francisco has an acceptance test, every job. And  
13 they require additional paperwork above and beyond what  
14 the State of California requires.

15 So that you have a jurisdictional issue with  
16 what is actually required. There's many jurisdictions,  
17 according to Title 24, you guys can correct me, you guys  
18 wrote it, I believe that the AHJ is not allowed to issue  
19 an occupancy without an acceptance test. Is that not a  
20 correct statement?

21 MR. LEE: That's correct. If there is  
22 acceptance test required for that, so we have our  
23 version of it --

24 MR. RANDOLPH: We have numerous -- we have  
25 numerous jobs. One of our big challenges is getting

1 into the building before the owners do.

2 MR. THOMAS: See, these are -- do acceptance  
3 testing. If we talk about taking another portion of  
4 this job and eliminating acceptance testing, I think you  
5 ought to accept a test with two fixtures. I really  
6 think.

7 If the goal is to be zero net energy by 2030,  
8 that's only 14 years from now, and that's the stated  
9 goal by the State of California, according to their  
10 documentation, then the other concept is that if you  
11 allow a -- we allow a certain size job not to be  
12 acceptance tested, now, that puts an undue burden on  
13 people who do a big job.

14 If I do a job with one fixture more than the  
15 allowed limit, then my customer have to pay for  
16 acceptance testing. If he did two fixtures less, he  
17 doesn't, and there's no verification.

18 MR. THOMAS: Well, that's the case now with the  
19 2013 Code.

20 MR. RANDOLPH: But it's the number is so small,  
21 it's only 20.

22 MR. THOMAS: Well, it's again, hopefully, the  
23 purpose of today is to figure out how to move forward so  
24 that everybody is satisfied with the level of compliance  
25 documentation, and the procedure that's workable, and

1 that's not overly-burdensome either for the building  
2 departments, for the utilities, or for the implementers.

3 MR. RANDOLPH: I think what we're doing works.  
4 We've been doing it for two years. It seems interesting  
5 to me that after two years we're deciding to go, hey,  
6 let's change the rules, let's make it easier.

7 MR. THOMAS: Well, I think fundamentally --

8 MR. RANDOLPH: You guys work within the  
9 constraints. PG&E works within the constraints. Sprig  
10 Electric works within the constraints. We all work  
11 within the constraints. We've been doing it for more  
12 than 18 months.

13 Now at this point to say, you know what, let's  
14 loosen the constraints, well, the Energy Code says our  
15 goal is to get tighter, and tighter and tighter, not to  
16 get looser, and looser, and looser.

17 MR. THOMAS: I think we're maybe talking about  
18 two fundamentally different sections of the market.  
19 We're talking about the existing building, small, medium  
20 businesses primarily, but existing building retrofits  
21 where occupancy permits are not required. That's  
22 irrelevant to the types of jobs that we do.

23 We're not talking about new construction, gut  
24 rehabs. We're talking about taking an existing  
25 building, with the lighting functional, where the owner

1 does not have to change the lighting at all because  
2 there's a new code. And we're trying to get those  
3 customers to make a positive change and maybe they've  
4 been showing themselves over -- since July of last year,  
5 that by and large in the small, medium business market  
6 they haven't been willing to install the advanced  
7 controls and, you know, multi-level dimming, and all of  
8 the stuff that's in the 2013 Code.

9           That's why implementers have had to shift to  
10 non-code-triggering jobs. We had non-code-triggering  
11 jobs in the code before 2013. They're in 2013. There  
12 are also non-code-triggering jobs in the 2016 Code.  
13 That's always been there and it continues.

14           So, how can we motivate customers to make a  
15 positive change towards that zero net energy goal?  
16 Would it be great if all of them would accept the much  
17 longer paybacks from advanced controls on every job?  
18 Sure. But many of them have said, no, we're not willing  
19 to pay that.

20           So, that's why the changes ended up getting into  
21 the 2016 Code and that's what we're trying to move  
22 forward with. Now that we have those changes that are  
23 in that, and they're in black and white, they're not  
24 going to change until 2019 or 2020, at the earliest, how  
25 do we make the compliance piece of the puzzle work? And

1 so everybody has the confidence level, people, the  
2 various stakeholders aren't over-burdened.

3           And what PG&E thinks, and what we think, is that  
4 providing detailed description of the existing  
5 technology, so it's easy for any compliance official to  
6 understand, a description of the wattage that's  
7 associated with that. I mean, it's not a big stretch as  
8 long -- in the earlier process, back and forth between  
9 the stakeholders, one building official said, you know,  
10 it's not really rocket science. We know what's in most  
11 of these buildings. So, it's not like a big stretch if  
12 somebody says this is a first gen 32-watt T-8, normal  
13 ballast factor appears at the wattage, that's -- and  
14 here's a picture of the representative one of those,  
15 where you can see the ballast and the lamp wattage,  
16 that's pretty darn good documentation.

17           And for the new equipment, here's the new  
18 fixture description, here's the new wattage, here's the  
19 cut sheet if you want it. You know, that's pretty good  
20 documentation.

21           MR. RANDOLPH: Unfortunately, my experience is  
22 that a large corporation will take the new regulations  
23 and manipulate it to their advantage. They will say,  
24 well, if I can just do that without doing this, then  
25 I'll do that.

1           While these regulations, I understand that  
2 you're looking at it from the aspect of how can we help  
3 the small to medium sized market, how can we do that?  
4 Unfortunately, the big electronic firms, or the medium  
5 size electronic firms, they will begin to -- they will  
6 immediately -- they do it, now. They attempt to  
7 manipulate the direction we have now from Title 24.  
8 Well, what if I just do this? Well, can't I just do  
9 that? It's always a game.

10           Well, if I do ten, if I do nine fixtures, is  
11 that less -- can that be less than 10 and can I use  
12 different requirements? We'll do projects of nine or  
13 ten fixtures each one, just so we don't have to activate  
14 Title 24.

15           And I understand where you're at, I do. And  
16 it's important that we do that. But I'm also looking at  
17 that from the whole standard of that we have a whole  
18 group of people whose only job is trying to figure out  
19 how to save a dime. And they will spend a dime to save  
20 a dime. And they will bypass anything that we allow  
21 them to bypass. As an AHJ, or as the State of  
22 California, if we allow them an avenue that they can  
23 manipulate they will manipulate, and they will run that  
24 avenue.

25           MR. STRAIT: Actually, given that, it might be

1 to focus this conversation. This conversation is about  
2 when code is triggered, what documentation, what  
3 compliance actions would be appropriate to make sure  
4 that we have some level of comfortability that we've  
5 confirmed existing conditions, and that we're not  
6 placing an undue cost to get to that level of  
7 comfortability.

8 A discussion of how the code should be  
9 structured or phrased to minimize people that are going  
10 to completely evade the code or about having some people  
11 have a non-code sort of project is actually outside the  
12 scope of what we're here to discuss today. But it's  
13 just to help focus folks.

14 MS. CUNNINGHAM: Peter, can you pull up the  
15 table so that we can have that as a reference? I think  
16 that will help guide the discussion. So we can see,  
17 yeah --

18 MR. STRAIT: Yeah, there's one person that has  
19 their hands raised. Let me check what that person's  
20 comment is and then we'll resume the panel discussion.

21 Anthony, did you have a question for the panel?

22 MR. FERNANDEZ: Yeah, just with the light power  
23 reviews by 35 to 50 percent, it is very difficult and I  
24 can see the frustration that the other guy has to do  
25 like a pre-inspection or something.

1           A lot of our inspectors here, in the City of  
2 L.A., have barely enough time to check four to five job  
3 sites that are brand-new permits. And getting them on  
4 the road to get a pre-inspection is ordinarily  
5 impossible.

6           And another comment about having major  
7 corporations doing manipulations, what I've seen  
8 sometimes are like a by parts or phases permits, where  
9 they'll do like one room, and then another room, and  
10 then another room. And they are willing to pull out  
11 five, ten permits to bypass these little checkpoints  
12 here and there, and then they don't end up doing any  
13 Title 24 controls. When, if they did the entire TI as  
14 one, they would have.

15           So, I do see that frustration.

16           MR. STRAIT: Okay, thank you.

17           I do know that we have, at least for the  
18 threshold for luminaire modifications, we did make sure  
19 that those were -- you have to have 70 within any single  
20 year, and that was in there to try to address some of  
21 those circumstances where people will break into the  
22 multiple projects.

23           Obviously, that's a concern of ours as well.

24           MR. RANDOLPH: Who will track the 70?

25           MR. STRAIT: Well, again, we're --

1 MR. RANDOLPH: Who will document the 70?

2 MR. STRAIT: To the extent that we have to have  
3 some sort of a threshold in there, given that we have to  
4 have something that demonstrates cost effectiveness, and  
5 usually there is a point at which additional measures  
6 aren't cost effective or project scale. Again, that's  
7 one of the questions we're going to answer here, or try  
8 to answer here, is what kinds of documentation are  
9 appropriate? What kinds of things would we want people  
10 to do from a compliance stand point? To at least  
11 minimize or at least provide some amount of  
12 encouragement or confidence that we can have that the  
13 majority of projects are going to comply.

14 I think we're always going to have some problem  
15 with people trying to find ways around regulations or  
16 these things. But this is really to say,  
17 constructively, what can we -- what general guidance can  
18 we provide building officials, for example, that says  
19 for these projects, when you're in 2016, here are some  
20 good ideas, here are some best practices, here are some  
21 things you might want to consider doing on your level.

22 And, for example, we get a lot of pushback not  
23 to create additional forms. But we're hearing the  
24 documentation is very important in this case. So, this  
25 could be a discussion, for example, would a form be

1 appropriate for this? If so, what would its contents  
2 best be? Those kinds of questions.

3 MR. KOTLIER: You know, the panel discussion's  
4 very interesting but there's a lot of people up there,  
5 and there's a lot of people in this room, I think, who  
6 would like to get involved in this discussion.

7 MR. STRAIT: Absolutely. We can --

8 MR. LEE: We can't hear the people.

9 MR. STRAIT: So, he has just made the point that  
10 we've got a lot of callers online, and people in the  
11 audience here that would also like to participate.

12 So, we find unless we have this panel, we're  
13 11:15 right now. After the panel has had a chance to  
14 speak on these issues, to open up the floor so that  
15 everyone does have that chance to speak.

16 I can ask the panelists if they feel that we've  
17 had a productive discussion so far and we might want to  
18 open this question up for more discussion by the  
19 audience. So, we can work with that, we might be  
20 flexible.

21 And I should say, for folks that are attending  
22 online, if you've got additional comments you want to  
23 make, like we've got another person that has their hand  
24 up here, we can, if the panelists are comfortable, have  
25 a short session where we interact with the folks that

1 are attending remotely and then we can get back to the  
2 panel.

3 MR. ENSLOW: I think that would be helpful.

4 MR. STRAIT: Okay.

5 MR. TAYLOR: And I think that that was always  
6 our intent. We wanted to get the ball rolling with some  
7 people we knew had something to say. And now that we  
8 have, I think we'll move on to that, soon.

9 MS. CUNNINGHAM: There was only -- there was one  
10 thing I did want to note that the Compliance Improvement  
11 Team, at PG&E, is interested in reducing complexity in  
12 combining the forms, in reducing the number, and  
13 developing a permit streamlining process for the  
14 projects that we can interact with, and that we're  
15 working on this right now.

16 And we definitely don't want to see complexity  
17 added. We think that if, instead, it is reduced that  
18 the motivation to comply will increase. They'll say,  
19 oh, well, we can get to our energy savings goals. And,  
20 wow, this process is a lot simpler than before. We want  
21 to commend the Commission for releasing the fillable  
22 forms that they put out last week.

23 And, you know, we are working on this now, so  
24 this permit streamlining process will offer three  
25 different options, give customers a way to kind of put

1 together packages that include some of this  
2 documentation information quickly, and maybe even  
3 accelerate the amount of time it takes to over-the-  
4 counter start this process with permitting.

5           We're working, first, with teams like Ecology  
6 Action, and we have about 12 pilot cities that we're  
7 going to test this out with. And we think that this  
8 package may help to inform this process.

9           Because our goal at Compliance Improvement, and  
10 my team, is reduce the amount of paperwork that you have  
11 to do. And so what we're suggesting here today is most  
12 certainly not add to the paperwork, it's look at what we  
13 already have and see if we can make that simpler. And  
14 add a few things to it, but delete some as well, like a  
15 few photos here and there. And this is really what our  
16 end goal is.

17           And it's not, it's definitely not to make -- add  
18 to the workload, the burden for the inspector. So,  
19 that's one of the things that I just want to make sure  
20 is clear is we're not saying pour on the process, woo-  
21 hoo bring on papers. We're saying remove what's not  
22 needed, combine, make them digital, collect savings in  
23 an easier way, and use some of the things we have been  
24 using in a more efficient way and maybe share them  
25 statewide.

1           MR. RANDOLPH: I was just -- 30 seconds. The  
2 City of San Jose does not even look at documentation by  
3 photo. That would be a very rare instance with the City  
4 of San Jose. As an inspector, and the City of San Jose  
5 policy has never been to look at photos because -- and  
6 I'm just saying, not that that's not a bad idea, but  
7 because of the verification process for pictures it's  
8 virtually impossible. Unless, if I went out and looked  
9 at a job and I asked them to provide me a photo of the  
10 panel schedule, I might allow them to e-mail me a photo  
11 of the panel schedule.

12           But as far as what was there, what was this,  
13 what was that, the City of San Jose, as a jurisdiction,  
14 their policy has been in the past we don't allow  
15 photographs, because the documentation is so difficult.

16           MR. LEE: Yeah, I understand that the City of  
17 San Jose under some financial pressure -- are they, you  
18 know, slowly getting back in good shape in terms of  
19 hiring more enforcement staff, you know?

20           MR. RANDOLPH: Well, they hired me as a  
21 contractor. So, if they had people on staff that could  
22 do what I do, they wouldn't be paying the contractor's  
23 overhead and hiring me to do that same job. So, whether  
24 they're -- how good a shape they're in? I'll say that  
25 they're still short on manpower. I don't know what

1 percentage because, like, I am a contract employee. But  
2 they're still hiring a lot of contract employees.

3 MR. LEE: Yeah, I understand that. I understand  
4 that's some jurisdiction, when they're under-staffed,  
5 they turn to outside for help. But point is that I  
6 understand all jurisdictions are different, some are  
7 big, some are small, some are well staffed, I think like  
8 San Francisco. But there are also some smaller  
9 jurisdictions so --

10 MR. THOMAS: And I think that's probably why the  
11 thinking is being that photographic evidence is an  
12 option. I don't believe it's being discussed as a  
13 requirement. I think that, ultimately, is going to be  
14 up to the individual jurisdiction.

15 And also, just to speak really briefly on  
16 motivation of the different players. You brought up  
17 people that have a negative motivation to cheat and to  
18 find ends around the --

19 MR. RANDOLPH: I don't want to use the word  
20 "cheat", but avoid --

21 MR. THOMAS: Okay, avoid compliance.

22 MR. RANDOLPH: Yeah.

23 MR. THOMAS: I would just want to stress that  
24 implementers, like ourselves, and the contractors that  
25 we work with and, really, most all the contractors that

1 we're familiar with, their motivation is to do good  
2 quality work. Because if they over-promise savings to  
3 the customer, the customer's going to get mad when they  
4 don't see them and call them back up. And that just  
5 goes up the chain to the implementers. If we employ  
6 contractors like that, and we get complaints on them,  
7 they hold the program that told them about this deal  
8 responsible for it.

9           And then, the IOU client that we have, or the  
10 POU client holds us accountable, and maybe we don't get  
11 that contract next time.

12           San Francisco Energy Watch is a \$44 million  
13 contract for us. That's a powerful motivation to do  
14 good quality work and not over-promise on energy savings  
15 by trying to work the system and not be accurate with  
16 what we're saying is on site when we first get there.  
17 So, I would just say we all should keep that in mind.

18           MR. ENSLOW: Yeah, I'd just like to respond to  
19 that. I mean, we know that's not the norm. I mean, we  
20 know that's not the norm HVAC system, we know that's  
21 norm on lighting controls and electrical systems. You  
22 know, the projects that Gene is talking about is just a  
23 small percentage of what's being done out there.

24           And verification is important and I agree that  
25 photos aren't sufficient to know what's before there.

1 But I also don't think we're talking about a huge amount  
2 of paperwork. We're already doing -- losing paperwork  
3 by not doing the controls. The paperwork necessary here  
4 is really just what has to be done in order to -- you  
5 know, for a contractor, it needs to do to determine that  
6 he has a 35 to 50 percent reduction. He needs to know  
7 what the model numbers are, what the specs are, do the  
8 calculations. He has to do that in order to figure this  
9 out.

10 Then if he just provides that to an acceptance  
11 tester, an acceptance tester just has to go in  
12 beforehand, verify a couple model numbers, come back  
13 afterwards and verify the model numbers and, you know,  
14 verify that the right product specs were used. It is a  
15 simple process, it's not a lot of paperwork. But it is  
16 important because we know that the good actors out  
17 there, unfortunately, you know, aren't even necessarily  
18 the majority. There is just a lot of -- you know,  
19 there's a lot of unpermitted stuff going on. We're  
20 working on that on ones -- people are getting away with  
21 stuff. They do, we know that.

22 MR. THOMAS: I've got one quick clarification.  
23 The amount of this kind of work that we're talking about  
24 is not just a small part of what's out there. It's the  
25 majority of what's out there in terms of lighting

1 retrofits in the existing building market.

2           And gosh, over the last, I've been here for 14  
3 years, it's north of about 400 gigawatt hours of  
4 savings, with about 50 percent of that being from  
5 lighting savings.

6           And I don't know if you've got figures ready to  
7 hand, but there's some huge numbers of savings from  
8 lighting alterations that get incentives. So, it's not  
9 just a small part of the market. It's the majority of  
10 the market if you're talking about existing buildings.

11           New construction is a whole different thing.  
12 Major gut rehabs and major tenant improvements where  
13 you're putting in new ceilings, new reflective ceiling  
14 plans, new walls, that's a whole different animal.

15           But we're talking about existing building  
16 lighting retrofits, where doing anything is optional,  
17 regardless of what version of the code you're looking  
18 at. So, that's just something to keep in mind.

19           MR. STRAIT: Yeah, I'd like to actually  
20 reinforce that. That when you have a major gut rehab,  
21 we have language that says here, changing walls and  
22 ceilings, then that's -- the new option is not  
23 applicable. You don't have access to it. If you're  
24 changing walls and ceilings then you're basically held  
25 to the current requirements of documentation, and

1 lighting power, and those metrics.

2 MR. THOMAS: Peter, could -- maybe it would be  
3 helpful just to show that spread sheet real briefly.

4 MR. STRAIT: Well, actually, before we do that,  
5 we've got a couple of people with their hands up online  
6 and they've been waiting patiently.

7 MR. THOMAS: Okay.

8 MR. STRAIT: I know we talked about getting some  
9 more of that immediate feedback.

10 So, I'm going to unmute, we'll start with  
11 Mostafa Kashe. Or, gosh, I hope I'm saying that right.  
12 Mostafa, you're unmuted. Do you have a question?

13 You're very faint. Let me --

14 MR. KOTLIER: Could you ask everybody to  
15 identify themselves and their position, please?

16 MR. STRAIT: Sure. Mostafa, could you identify  
17 who you're with and what your position is?

18 MR. KOTLIER: You muted him.

19 MR. STRAIT: Oh, shoot, let me unmute. I'm  
20 sorry. There we go, you should be unmuted.

21 MR. KASHE: Can you guys hear me?

22 MR. STRAIT: Yes.

23 MR. KASHE: You can --

24 MR. STRAIT: Yes, yes, we can hear you.

25 MR. KASHE: Okay. So, my name's Mostafa Kashe

1 and I'm an inspector with L.A. County, which is one of  
2 the -- well, the largest county in California. I have  
3 got 11 county offices. I've the (inaudible) -- and I do  
4 plan check for them and do coding for them.

5 It would be very difficult for my jurisdiction I  
6 have, physical -- the central office, where I am, and  
7 I've got almost 26 offices across the County that do  
8 inspection for me.

9 For me, as a plan checker, or getting orders  
10 from my plan checker (inaudible) -- saying, oh  
11 (inaudible) -- what we need to have from our end, it  
12 would be very difficult.

13 But I do agree if we could have a third party,  
14 and (inaudible) -- to be able to verify and document  
15 that on their own, for us to be able to send someone out  
16 there, it is more (inaudible) -- again, a third party  
17 that is recognized by the State (inaudible) -- that have  
18 gone out there and verify the official (inaudible) --  
19 thank you.

20 MR. STRAIT: Okay, thank you very much for your  
21 comment.

22 We've got a few other raised hands. Let me go  
23 to Behzad Eghtesady.

24 MR. EGHTESADY: Yes.

25 MR. STRAIT: Yes, you're unmuted.

1           MR. EGHTEESADY: Yes, my name is Behzad Eghtesady  
2 with the City of Los Angeles, Department of Building and  
3 Safety. We're the largest city in L.A. County. And I  
4 have two issues I want to voice out.

5           One has to do with the requirement on luminaire  
6 component modification, the number of quantity in a year  
7 period. It is going to be very difficult for our  
8 jurisdiction to keep track of that, that they are doing  
9 70 or less in a particular space.

10           When they come in, go through process, complete  
11 and walk away, we will not know if six months later  
12 there are going to be some other changes taking place.  
13 So, it's going to be difficult for us to keep track of  
14 that in our jurisdiction because we deal with so many  
15 buildings, so many tenants in a year. It's mind-  
16 boggling to count the numbers. That's one thing.

17           The other thing is what if I have less than 70,  
18 but I'm putting fixtures that exceed the current  
19 requirement in Section 140.6? There's nothing in the  
20 code right now to prohibit that. So, I could go ahead  
21 and put 50, modify 50, and then I have -- consume more  
22 power than I did before. So, I see a little gap in that  
23 requirement.

24           The other thing I have a concern has to do with  
25 the existing or new replacement requirement, or you're

1    tying the additional walls with the redesign of lighting  
2    system.  And I see a loophole right there.  Someone puts  
3    walls around the existing ceiling and make a room out of  
4    it, based on this language right now, they don't have to  
5    do anything and comply because I have not modified my  
6    lighting ceiling design, and even though I've created  
7    new space out of it.  So that, I see an immediate  
8    problem right there.

9                So, those are the issues that I have concerns  
10   with and I just want to know what you guys have to say  
11   about it.

12               MR. STRAIT:  Sure.  I can, very quickly,  
13   regarding the additional -- that's actually a carryover  
14   of language that's in the 2013 requirements.

15               MR. LEE:  Yeah, I'm just looking at the language  
16   here, so subsection I, that's the entire alterations.  
17   Okay, so for each space, okay, so there's an A, B, and  
18   C.  I'm just going to go over these and see if it  
19   pertains to your question.

20               If they are adding walls or ceilings --

21               MR. STRAIT:  I think, and perhaps you can  
22   clarify this for us, you mean for someone that's adding  
23   a wall but they are not in any way modifying the  
24   lighting system?

25               MR. EGHTESADY:  That is correct.

1           MR. STRAIT: So, the basic principle in the  
2 operations section as a whole, not the lighting section  
3 for the entire thing, is that alternation requirements  
4 apply to the altered components. So based on that, the  
5 fact that part of the building is not altered, we can't  
6 say that that building is not subject to requirements  
7 under the efficiency code.

8           MR. EGHTESADY: Well, what I just described to  
9 you is a simple scenario where the ceiling system stays  
10 the same, they're adding walls and creating a new space.

11          MR. STRAIT: Right.

12          MR. EGHTESADY: So now, you have no control for  
13 any device in a new space or no requirement by Energy  
14 Code, so anybody can do anything they want in this new  
15 space.

16          MR. STRAIT: Right. So, if somebody adds a wall  
17 and does not, for example, add controls so that you only  
18 have one switch that controls both spaces, that might be  
19 something that we would -- might want to take a look at  
20 the next time we have an opportunity to update our code  
21 and provide changes there.

22           I don't know how common that situation would be.  
23 Most of the time, I think when someone's adding a wall,  
24 they would want to add a control to the other room so  
25 that both areas are able to be separately controlled.

1 And in doing so, because at that point they're making a  
2 modification to the system, that would bring Title 24  
3 requirements to the lighting system.

4 But I agree, there might be situations where  
5 somebody could intentionally avoid touching parts of the  
6 building and, therefore, avoid the requirements to  
7 update those parts of the building. I think that's more  
8 of a general -- due more to the general structure of  
9 Title 24 alteration requirements, rather than being  
10 specific to lighting. But it's certainly something we  
11 can look at in our next code cycle.

12 MR. LEE: Yeah, I guess my take on that, if  
13 somebody is creating a room and then without controls in  
14 it, he's not going to (inaudible) -- because, I mean,  
15 basically, someone's sitting in the room with no  
16 controls and it will be a hazard (inaudible) --

17 MR. EGHTEADY: Yeah, I was more thinking in  
18 that sense, if they do put walls that, in essence, even  
19 if they haven't touched the ceiling, they have modified  
20 the existing lighting system design and the floor.  
21 Wouldn't that be a way to look at it to enforce the  
22 requirements?

23 MR. STRAIT: If the lighting is not in any way  
24 modified, then it would be difficult for us to say  
25 they've modified the lighting system. Acknowledging

1 they're adding a wall or any sort of partition would  
2 certainly change -- or put it another way, given the  
3 lighting was designed without the idea there was going  
4 to be a wall in that place, and now there is a wall, so  
5 the design isn't matched to the conditions being  
6 created, it would be difficult for us, I think, to call  
7 it a modification of the lighting system.

8           Typically, the system refers to those physical  
9 components that are connected to perform that function.  
10 For example, we can talk about the HVAC system, we can  
11 talk about the ducts, we can talk about the controls of  
12 that HVAC system, we can talk about the equipment,  
13 itself. But we couldn't talk about necessarily putting  
14 a partition, unrelated to that, being that it's also  
15 going to affect how air flow's going to occur throughout  
16 the building.

17           So, that is something we can consider, but I'm  
18 not sure without checking with our (inaudible) -- and  
19 giving some time to whether we could -- whether we could  
20 reach that with a determination somehow.

21           MR. EGHTEADY: Okay. There are other issues  
22 that I brought up and keeping track of what happens  
23 within a one-year period. It's going to be very  
24 difficult for major stations, and let alone us. How do  
25 you guys expect us to do that? We can't. It's

1 impossible for us to keep track of it.

2 MR. STRAIT: Sure. We know that one-year time  
3 was actually part of the 2013 Code and received some  
4 feedback around that earlier in this process. Earlier  
5 versions of these regulations actually removed that  
6 requirement because we found that it was difficult or,  
7 as you've said, challenging to enforce.

8 But we received other comments that would  
9 suggest that we put it back in because otherwise it  
10 would create too large of an ability to continuously  
11 engage in projects, retrofit extremely large areas  
12 without clearing code requirements.

13 So again, it's one of those balancing acts where  
14 we do have -- it is a challenge we face in figuring out  
15 how to structure these kinds of codes and these kinds of  
16 requirements.

17 But to focus the conversation for today, with  
18 the requirements that we have on the books right now,  
19 the question is what compliance mechanisms are  
20 appropriate.

21 MR. EGHTEADY: Well, that's one thing. And  
22 then the other issue I brought up is if it's less than  
23 70, but they put less efficient luminaires that don't  
24 comply with 440.6, there's no enforcement involved.  
25 There's no compliance requirement.

1           MR. STRAIT: Sure. And again, there is a  
2 threshold in the 2013 Code, as well, at 40.

3           MR. EGHTEADY: Right.

4           MR. STRAIT: That actually increased for certain  
5 kinds of spaces. The issue there is we're not sure what  
6 would motivate someone -- and again, this applies only  
7 to luminaire modifications. So, somebody that's  
8 installing a new luminaire, that doesn't apply.  
9 Installing a new luminaire or removing a luminaire and  
10 putting a new one in would trigger code.

11           That only applies when you're going internal to  
12 install a luminaire and making modifications internal  
13 for that fixture. So, we're not sure often someone  
14 would make an internal modification that would increase  
15 his lighting output -- the lighting power consumption  
16 and do so to a level that would exceed a normal lighting  
17 power allowance threshold.

18           So, agreeing that is something that our code  
19 doesn't look directly at, we're not sure in practice how  
20 often that kind of situation would develop.

21           MR. THOMAS: I would just say --

22           MR. EGHTEADY: Yeah, as far as pre-construction  
23 inspection that was brought up, you guys developing a  
24 form that someone is going to be verifying and bringing  
25 to us to look at before we -- before we would say, yeah,

1 you have less than 70 and we can go ahead and issue a  
2 permit without requiring a Title 24 compliance, how's  
3 that going to work?

4 MR. STRAIT: Well, that's what we're -- that's  
5 one of the questions were asking today is, A, is a form  
6 appropriate. B, if people feel that they want  
7 additional forms, what should the content of those forms  
8 be?

9 MR. EGHTESADY: Well, I think the contractor or  
10 whoever it is that is obtaining the permit should come  
11 up with -- yeah, I mean, the State can come up with some  
12 form, that they need to complete the form and sign, and  
13 stamp it, take the full responsibility that that's what  
14 they claim to be. And then, let the process begin and  
15 go through an inspection, and stuff. If at any point  
16 down the road an inspector or acceptance sees that it is  
17 different, then they have to sign and say, hey, you  
18 can't get an approval and go back and do whatever you  
19 have to do at that point. But the form has to be done  
20 by the person who is trying to obtain a permit, then  
21 somebody else to go and verify that.

22 MR. TAYLOR: This is Gene Thomas. I would agree  
23 with that. So, for our jobs that are code compliant,  
24 it's up to the installation contractor that we're  
25 handing the job off to, to do the compliance paperwork

1 that's necessary to get the permit.

2           So, in terms of what forms are required, you  
3 know, we're hoping for a more lighting retrofit,  
4 alteration-specific kind of LTO-1 form. I mean, right  
5 now that's the lighting compliance form is centered  
6 around lighting power density and computations there.  
7 For people that are taking this path, which is probably  
8 going to be most of them, you need a more streamlined  
9 form that gives you sufficient information that you have  
10 confidence in that preexisting wattage and fixture  
11 description, and the post-fixture description and  
12 wattage, and quantities, and that delta wattage, that it  
13 hits that percentage.

14           But I agree with Scott and others that it's  
15 going to be probably seldom that a jurisdiction will  
16 want to go out, hey, we're -- we hear you're doing a  
17 \$5,000 lighting retrofit, so we want to go out and  
18 physically look at all of the existing equipment before  
19 you do any work. It never has really been like that and  
20 it's unlikely that it would be like that.

21           But in terms of inspections, if any of the  
22 programs, like ours, they have internal inspections.  
23 So, we have management pre-inspections of our own  
24 auditor spec, then there's 100 percent internal post-  
25 audit inspections of every job.

1           And then, PG&E or our other utility clients have  
2 a percentage of their people that go out and verify that  
3 what we installed is installed. And then evaluation  
4 measurement and verification people that come out, and  
5 go and look at the programs, also do a sampling.

6           So, even if nobody from the jurisdiction has  
7 physically been out there, there's a lot of due  
8 diligence that's been done on these projects if they're  
9 going to get publicly-funded incentives.

10           MS. CUNNINGHAM: And I agree with the things  
11 that Gene is saying. And looking, backing up a little  
12 bit in his comments, like what that should look like.  
13 The form itself, documentation, something dynamic that  
14 removes the things that are no longer relevant for the  
15 job. Maybe based on a checklist to start, which then  
16 populates the form accordingly. Something that is  
17 digital and presents the end user with things that are  
18 only what's necessary for that project. And that  
19 project may trigger some photographic evidence, maybe  
20 not. You know, just maybe there's a size threshold  
21 where that's set at.

22           And in terms of what you just said about the EMV  
23 teams, or the verification teams, or the random sampling  
24 that PG&E may do of projects that were installed above a  
25 certain size, that also speaks to that third-party

1 verification that Tom [sic] Randolph pointing to, and  
2 that the inspectors on the phone, or building  
3 departments have also said it just can't be us. But it  
4 doesn't preclude the existence of that person, but maybe  
5 there is a threshold, or a randomness to that, or a  
6 formula to say these projects, but not all, to keep it  
7 cost effective, which is part of your burden that you're  
8 facing.

9           So, that we agree that we're on the same page  
10 here.

11           MR. STRAIT: Okay. We have a few other people  
12 with their hands up. I'm going to go to Nick. There  
13 are two people that have their hands raised, that their  
14 names aren't directly associated with their call-in, so  
15 then I will unmute the people identified as call-in user  
16 and we can talk to those folks.

17           But first, Nick, go ahead, you are unmuted.

18           NICK: Okay, can you hear me clearly?

19           MR. STRAIT: Yes, we can hear you.

20           NICK: Okay, thank you so much. This is a great  
21 presentation, but we went through it rather quickly. My  
22 question, my request is I'd like to get a copy of your  
23 PowerPoint.

24           MR. STRAIT: We will be posting a copy of the  
25 PowerPoint after the workshop, so you can download that

1 from our website.

2 NICK: Not to the WebEx platform here?

3 MR. STRAIT: No, the -- we can't send that. Let  
4 me think. I don't know if I can easily get to the  
5 website location that we are posted these at, from here  
6 at the podium where I'm at right now. But we will post  
7 that file and we will also send notice to our efficiency  
8 and our building standards list serve that that  
9 presentation file is available. So, if you've signed up  
10 for either of those list serves, you'll receive notice  
11 for that.

12 If you haven't signed up for our list serve,  
13 there are instructions to do so found on our website.

14 NICK: Okay. I can probably find it through the  
15 CEC site for now.

16 MR. STRAIT: Yes, yes, the web we have there.

17 NICK: All right. Well, thank you so much.

18 MR. STRAIT: No problem, thank you.

19 All right, the next two people, there is a  
20 Tunisia Tilley and a David Rivers. One moment.

21 All right, I'm going to unmute call-in users.  
22 Let's try to find which one of these is Tunisia and then  
23 we will --

24 MS. TILLEY: Hi.

25 MR. STRAIT: All right.

1 MS. TILLEY: Can you hear me?

2 MR. STRAIT: Yes, you are call-in number 16.

3 MS. TILLEY: I'm Tunisia.

4 MR. STRAIT: Yeah, go ahead and please introduce  
5 yourself and who you're representing.

6 MS. TILLEY: Hi, I'm Tunisia Tilley. I'm a  
7 drop-in control and lighting engineer. And I was just  
8 calling from -- or about information, rather, regarding  
9 the new changes that you guys have permitted today.  
10 Will they be applied (inaudible) -- and if so, when will  
11 they be posted (inaudible) --

12 MR. STRAIT: When we -- where our compliance  
13 strategy is going to go is we are going to publish a  
14 portion of our compliance manual that will speak to  
15 these issues. That's not a regulatory document. It's  
16 descriptive of the regulations. That will contain the  
17 results of this work.

18 In addition, if we end up developing forms,  
19 those will also be published. This will happen before  
20 the middle of this year, so look for June, July at the  
21 latest. Although, I think we're planning on putting  
22 these out as quickly as possible.

23 MS. TILLEY: Okay, thank you.

24 MR. STRAIT: All right. Now, David Rivers, did  
25 you have a question or comment?

1           MR. RIVERS: Yeah, this is Dave Rivers. Can you  
2 hear me?

3           MR. STRAIT: Okay, just can you identify who you  
4 represent?

5           MR. RIVERS: Yes, this is Dave Rivers. I work  
6 with Southern California Edison in the Emerging Products  
7 Group. I also support our Codes and Standards Team.

8           And I just wanted to say a couple things. The  
9 first thing, a lot of good comments today. A lot of  
10 statements were made that will give us some thoughts on  
11 how we can help the building departments get through  
12 this process and the contractors, too.

13           But one of the main concerns I have, because I  
14 was doing lighting retrofit for 20 years, and along like  
15 Gene Thomas, we had a particular, similar package that  
16 we did. Basically, the same amount of calculations, the  
17 depiction of products in and out.

18           But that always sat on the bid dock, and it got  
19 lost some place, put in a file cabinet.

20           One of the things, if we're going to come up  
21 with a tool or a different compliance way to enforce the  
22 Title 24 Code is that it has to be a living document.  
23 It has to be something that will support the building  
24 departments. But more importantly, something that it  
25 can be left behind and a legacy to the facility

1 operator, or the next guy that comes online, that he can  
2 actually see, room-by-room, what were the changes? What  
3 were the controls? What was done in that room and left  
4 behind.

5 So, the next person along the line can either do  
6 another, next generation of energy efficiency or, if he  
7 can have an opportunity to add additional controls, or  
8 being included in an EMS system that interfaces both a  
9 lighting control system and an HVAC control system.

10 A lot of times that documentation is not there.  
11 So, a lot of times things get left behind. And I think  
12 the -- I believe Gene called it the lighting modifier  
13 calculator. It's similar to several other what we call  
14 (inaudible) -- that can be digitized electronically and  
15 provided to the facility manager, and also the building  
16 department to make those decisions on what needs to get  
17 inspected and how it's going to get inspected.

18 And also, the facility manager, how he's going  
19 to be able to sustain that system as we go forward.

20 So, that's all. We'll be working up some  
21 comments with the other IOUs, and I appreciate  
22 everybody's candor today, and laying out their feelings  
23 on what they feel and how the code's coming along.

24 MR. STRAIT: Certainly. Thank you for your  
25 comments.

1 All right, Nick and Tunisia, you still have your  
2 hands raised. If there weren't additional comments,  
3 could you please put your hands down? Thank you.

4 All right, is there anything that folks in the  
5 room, or that the audience here in the room would like  
6 to get up and speak? We can provide a microphone if  
7 anyone would like to. Yes, we have someone in the back.

8 MR. MC DOWELL: My name is Gary McDowell.

9 MR. STRAIT: Can you speak in the microphone,  
10 please, sir?

11 MR. MC DOWELL: I'm sorry. My name's Gary  
12 McDowell. I'm a foreman right now with JATC, Local 340  
13 IBEW. Prior to that, I spent over 30 years of  
14 electrical inspection for the City of Sacramento.

15 Now, everybody mentioned or several people have  
16 mentioned photographs. Well, frankly, they don't work.  
17 I've seen photographs and later found out that it wasn't  
18 even the same project. And, you know, if you're going  
19 to do this thing, I believe that you should have, maybe,  
20 like somebody mentioned a third party should be  
21 required. That they can go out and pre-inspect these.

22 Because like you've mentioned, everybody's  
23 mentioned, the local agencies just don't have the  
24 manpower.

25 Also, I think to do these installations,

1 lighting that is, that the people should be certified  
2 that they have been trained properly and the acceptance  
3 testers also have to be trained and certified. I don't  
4 see anything like that in there. Maybe it's already in  
5 there and I'm not aware of it.

6           Anyway, that's it.

7           MR. STRAIT: Thank you for your comments.

8 Acceptance testers actually do have to go through an  
9 acceptance tester certification program. So, there are  
10 training requirements for those.

11           Otherwise, professionals, I don't know if  
12 there's formal requirements, but there are for the  
13 inspectors that we require.

14           In terms of requiring independent inspection for  
15 lighting projects under the current code, that would be  
16 imposing an additional requirement, so that might  
17 require a code change before we can go in that  
18 direction. But we have heard that feedback, that people  
19 feel that third party inspection does provide value.

20           But again, we would have to also figure out the  
21 cost of doing so, and at what scale that becomes cost  
22 effective.

23           MR. THOMAS: I just want to mention that any of  
24 the actual installers have to be licensed contractors,  
25 or C-10 electricians, so they have to have all of their

1 bona fides to be able to do the installations.

2 I suppose one way around that is for a customer  
3 that was doing a self-install, but they still have to  
4 certify that they're meeting all applicable regulations  
5 involved, and they're still getting pre- and post-  
6 inspections by the third-party implementer.

7 Another thing, just to remind, we are a third  
8 party. People, like Ecology Action, and the others that  
9 have been given contracts by the utilities, have to  
10 provide their own bona fides to demonstrate that, hey,  
11 we're willing, we have the expertise needed to specify  
12 these kinds of jobs, and provide the oversight.

13 The other thing that's an incentive, in terms of  
14 things like the 70 threshold or fixture modifications,  
15 will there be people that conceivably could try to work  
16 around that, or work the system so that they're doing a  
17 whole bunch of little phases? That's possible. But I  
18 think what's going to happen is the bad actors will  
19 quickly surface.

20 And the contractors, the guys at the building  
21 departments see a parade of contractors. And I'm sure  
22 you have ones that you're familiar with, you see them  
23 all the time.

24 So, when you start seeing a particular  
25 contractor that's associated with a lot of problems,

1 you're going to have a tendency to know who to keep an  
2 eye on in terms of what they're saying,. As opposed to  
3 the people that you know are doing a good job, and  
4 they're on the up and up, and they're working with the  
5 utilities and doing a lot of projects that the utilities  
6 don't have problems with. So, that's kind of a self-  
7 correction kind of function.

8 MR. SHIRAKH: I have a question.

9 MR. STRAIT: If the mic is low on batteries, I  
10 have some spare batteries. Yeah, it's on. Here, you  
11 can use this microphone.

12 MR. SHIRAKH: I'm Mazi Shirakh, CEC staff. On  
13 the photographs, you mentioned that they may not work,  
14 but you also mentioned that you were able to identify  
15 that they didn't belong to a certain site. Well,  
16 doesn't that suggest the pictures actually work once you  
17 make that identification.

18 You need to come to a podium to answer.

19 MR. MC DOWELL: One of the most noteworthy was a  
20 picture of guys wanting to put underground in, and take  
21 pictures and have an inspection. Well, they sent the  
22 pictures in. And then they failed to realize, in the  
23 background there was a picture of a different building  
24 than where they were. Just an example.

25 MR. SHIRAKH: Just it works, actually.

1           MR. ENSLOW: I think that's the exception,  
2 rather than the rule. I mean, normally it would just be  
3 a photo of --

4           MR. MC DOWELL: It's an exception -- like he  
5 mentioned, the City of San Jose doesn't accept pictures.  
6 When I was with the City of Sacramento, we didn't,  
7 either.

8           MR. RANDOLPH: It's virtually impossible. A TI  
9 is a TI, is a TI. I can take you to -- if you to, we  
10 can go to San Jose right now. I can take you to a  
11 hundred buildings and I would challenge you to tell me,  
12 after you left, which building is which. Because every  
13 building has 2-by-4, they all have indirects, LED or  
14 fluorescent lighting. I can randomly take pictures. I  
15 can literally provide you with thousands of pictures and  
16 you would not be able to identify the difference in the  
17 building unless you looked at the carpet color. It's  
18 just virtually impossible with the fast-track method of  
19 building.

20           At least in the Bay Area, where everything is 2-  
21 by-4. Everything, or linear. If you want to do  
22 linears, we can look at -- you know, if you don't have a  
23 trained eye to decide which model or style of linear,  
24 most people, 95 percent of the people won't even  
25 recognize the difference in the fixtures.

1           It's virtually impossible to do a plan check or  
2 a verification by photo. I wouldn't accept it and I've  
3 been doing this for 33 years. I would not accept photos  
4 for plan check. I don't, now. If you want to, you have  
5 the inspector, you will hold his hand, you take him out  
6 to the job, you show him what's there, we're done.

7           Otherwise, hey, that's why we don't need  
8 inspectors at all. We'll just photograph everything.  
9 Take a building while you're torquing down your lugs  
10 and your switch gear. Take a video for this, take a  
11 video for that. Hey, great, I can sit in the office and  
12 watch videos, and make the same amount of money. But  
13 it's virtually impossible.

14           There are isolated -- this is not -- the level  
15 that they're working at, I understand. I understand  
16 that with PG&E, and with Gene, how they're working that.  
17 I understand what they're concept is, they want to  
18 streamline. I understand all that.

19           But ultimately, as an AHJ, our ultimate job is  
20 to provide a safe electrical installation for a  
21 customer. If they're doing lighting retrofit without  
22 some sort of inspections, there's no way of verifying  
23 these are done safely. They're not talking about  
24 bypassing the inspection process. But how does the  
25 inspector know if even their modifications --

1 admittedly, they use good contractors. I work for a  
2 good contractor. We still have to go through an  
3 inspection process.

4           It's easy to make a mistake. I could point to  
5 you, we could go to my office right now and I could show  
6 you 20 jobs where my company made a mistake in the  
7 situation of installing the lighting controls, or the  
8 fixtures and things like that, and it wasn't found out  
9 until the acceptance test.

10           The acceptance test process is a method of  
11 verifying that what we did met the Title 24 compliance.  
12 Whether it's 20 fixtures, or 70 fixtures, or 7,000  
13 fixtures. And that's really, I'm saying, to skip the  
14 acceptance test procedure because we've got less than 70  
15 fixtures, how do we verify that those 70 fixtures are  
16 even meeting the qualifications without an acceptance  
17 test.

18           MR. THOMAS: Yes.

19           MR. RANDOLPH: I know, Gene, I know your  
20 organization does that.

21           MR. THOMAS: It's not required. In other words,  
22 if we do less than 70 --

23           MR. RANDOLPH: Well, right now it's 20. Let's  
24 leave it at 20.

25           MR. STRAIT: To clarify the way the code works,

1 for luminaire modifications there is a threshold before  
2 which any code requirements would occur. Under 2013,  
3 it's 40 fixtures. Under 2016, it's 70 fixtures. That's  
4 separate from the exception that we have acceptance  
5 testing, specially, which is that 20-luminaire  
6 threshold.

7 So, just to clarify, there are two different  
8 mechanisms to try to do that. So, I think the same type  
9 applies that you're saying that their -- acceptance  
10 testing adds value to the project and, certainly, causes  
11 additional savings to occur, or there would be a loss of  
12 savings without acceptance testing.

13 I know the problem from our calculation, why we  
14 arrived at that 20, was looking at what the likelihood  
15 of an error was, what the energy cost of that error was,  
16 and at what point that acceptance testing, know that  
17 there's a price for it, for somebody to come out on site  
18 involves the number of fixtures that they're going to be  
19 looking at, or the number that they're going to be  
20 testing, what that balance point was.

21 And that just goes back to the statute that we  
22 have to make sure anything we require is cost effective.

23 MR. ENSLOW: I'd just like to reiterate, again,  
24 you know, that we're concerned about enforcement for all  
25 projects, not just incentive projects. And this applies

1 to all projects, not just incentive projects. And I  
2 think it's real important that we have uniform  
3 requirements that are effective for all projects.

4 And we appreciate, you know, PG&E's efforts at  
5 verification, making sure that their incentives result  
6 in real savings.

7 However, we don't necessarily have the same  
8 level of confidence that their verification, you know,  
9 is necessary to the level that it needs to be on these.  
10 And even just historically, you know, for a long time  
11 until it was mandated, I think by statute, PG&E didn't  
12 even make sure that permits were pulled before they gave  
13 incentives.

14 So, you know, we think there needs to be real  
15 standard requirements that are mandatory and not just  
16 rely on the good will of the incentives, and good will.  
17 And not that they don't do good work, but I think we  
18 can't just say, hey, yeah, they're doing a good job so  
19 we don't need to do anything more.

20 MR. STRAIT: Sure.

21 MS. CUNNINGHAM: Other than a person verifying,  
22 what tools or processes would you suggest be developed  
23 to support the process to meet your level of kind of  
24 saying good enough for a statewide standard. Other than  
25 a person, because we've covered that.

1           MR. RANDOLPH: The same process. We have this  
2 process now, it's called plan check. And so, it does  
3 require -- if we could do plan check without a person  
4 looking at the plans, believe me, the City of San Jose  
5 would implement that process. There's a reason why  
6 every plan that goes through the City of San Jose is  
7 looked at by a human being for code and Title 24  
8 compliance, because it's that's what level is required.

9           MR. STRAIT: I think you're referring to on-site  
10 inspection, such as --

11           MR. RANDOLPH: But the whole concept of not  
12 being able to have an inspection -- not that we don't  
13 trust you. Hey, I write a check to PG&E every month.  
14 My power's always on.

15           MS. CUNNINGHAM: No, the inspection's still  
16 there.

17           MR. RANDOLPH: Right, but it's difficult without  
18 someone looking at something to verify that it is done.

19           MR. THOMAS: Let me just ask a quick question.

20           MR. RANDOLPH: Not that you guys aren't --

21           MS. CUNNINGHAM: I think we're talking about two  
22 different parts of the process. I was looking in  
23 something a little different.

24           MR. RANDOLPH: All right.

25           MR. THOMAS: Plan check doesn't come into play

1 with typical --

2 MR. RANDOLPH: No, but I'm just --

3 MR. THOMAS: So, let's narrow our focus for just  
4 a moment to existing lighting retrofits.

5 MR. LEE: Gene, you're not --

6 MR. THOMAS: Oh, I'm sorry. Let's limit our  
7 focus for a moment just to existing building lighting  
8 retrofits where you're not -- and the vast majority of  
9 our jobs do not require new wiring, other than some low-  
10 voltage control wiring, whatever. You're not typically  
11 doing lighting wiring alterations. So, it's just what's  
12 already there in the ceiling.

13 Of that world, what percentage of the time do  
14 you send somebody out into the field to look at it  
15 before they do anything?

16 MR. RANDOLPH: My point really was that -- and  
17 maybe I misunderstood the question. Is how to implement  
18 this without a person looking at it?

19 MR. THOMAS: Before.

20 MR. RANDOLPH: Before. And my concept wasn't  
21 that -- my position, my statement that plan check is  
22 required, I was referring to that in more of a  
23 generalized term. It's, yes, you send a person out.  
24 Gene, I don't know, if your company sends a person out  
25 to look at it, that person goes out, they know what

1 they're looking at. They provide the required  
2 documentation to the AHJ that satisfies the AHJ and the  
3 acceptance tester, whoever that third party is, and we  
4 move on.

5 But the concept that I'm hearing, that I was  
6 hearing is that there's a situation where we don't want  
7 to provide the necessary documentation. What we do now  
8 is good enough. That additional documentation shouldn't  
9 be required.

10 MS. CUNNINGHAM: No. No, not at all. I was  
11 just asking kind of what you just said is you're also  
12 making a case for the same the gentleman did, somebody  
13 who has received education and training on a process, if  
14 the contractors were to go through an education and  
15 training process, and fill out a set of documentation  
16 and present that, then that might work. So, we were  
17 hoping to narrow down, even zoom down even further on  
18 what's in that documentation. But I think maybe that  
19 will be the takeaway and the homework for the follow up,  
20 for the organizers today. And, hopefully, we can  
21 provide some more things to support that later.

22 MR. SHIRAKH: Can I make one quick comment?  
23 This is Mazi Shirakh, with the Energy Commission. So,  
24 the problem we have here is a little bit different.  
25 Acceptance testing inspection, how that works for, you

1 know, when you're inspecting the existing lighting  
2 system, after -- but we have a challenge here and that  
3 is to confirm the existing condition before they touch  
4 anything. Because once that system is gone, it's gone.

5 So, I think the question that we've had is what  
6 level of documentation we need to ascertain the existing  
7 condition? That way, that's -- which becomes the basis  
8 for the 35 percent or the 50 percent reduction.

9 So, that's the part that we're struggling with.

10 MR. THOMAS: Right. And if, now, for this  
11 market in existing building retrofits, if the  
12 jurisdiction is not now sending anybody out to verify on  
13 site, for these types of retrofits, and that's typically  
14 the case, why would you want them to do it under this  
15 new scenario?

16 MR. ENSLOW: I'd like to address this. This is  
17 the crux of the issue. And that under, you know, all  
18 the other pathways for compliance with these alteration  
19 modification requirements, what you need to verify is  
20 what's -- you know, what's done, so what's after the  
21 fact.

22 The issue that we have had from the get go, and  
23 still is the crux of our issue, is that this requires  
24 baseline verification. And without baseline  
25 verification, we just don't think that you're going to

1 get anywhere near the savings that is assumed, and as  
2 justifying not having the controls.

3           And so, yes, we think baseline verification is  
4 the key and the crux of the issue. How do we do that?  
5 Well, we've talked to inspectors, we've talked to  
6 contractors, we've talked to our lighting control  
7 experts and our lighting experts. And, you know,  
8 initially, one of our thoughts was photos. And what we  
9 have heard again and again, from inspectors, is you  
10 can't trust these photos. You can't tell from the photo  
11 that this is really the place.

12           MR. THOMAS: You could. You could GPS-tag the  
13 photos.

14           MS. CUNNINGHAM: Yeah, I was thinking that.

15           MR. THOMAS: It's not impossible by any stretch.

16           MR. ENSLOW: Maybe with the --

17           MR. THOMAS: I'll also say that CPUC has  
18 specifically told us we're going to be looking at that.  
19 We're going to be looking for photos that are clearly  
20 duplicates. If you Geo-tag them, which you can do on  
21 any point and shoot a camera nowadays, you know exactly  
22 what building that's in.

23           MS. CUNNINGHAM: Yeah, it might be through --  
24 there's a digital submission process. I mean, it's a  
25 paper-based world at this point, or community I should

1 say, but maybe there is an evolving digital process  
2 where you have that kind of metadata, where you can see  
3 I was here at this time and shot this thing.

4 And it certainly can't stand alone as the only  
5 moment of verification. There's also the schedules,  
6 there's also the calculations that you have to show.  
7 And then also, as a result of today, it sounds like  
8 there might also need to be -- you know, are you  
9 proposing, for example, that all the contractors go  
10 through a certification program to be able to turn this  
11 in and say what's on this is truth.

12 MR. ENSLOW: Well, that's the acceptance test  
13 process. And actually, right now, just to clarify, if  
14 you're certified as an acceptance tester, you can self-  
15 certify. So, if the company that installing has a  
16 certified acceptance tester on staff, that staff can --

17 MR. THOMAS: All of our participating  
18 contractors, C-10 electricians that have --

19 MR. ENSLOW: Have acceptance testing  
20 certification.

21 MR. THOMAS: Yes.

22 MR. ENSLOW: So, it's not that -- you know, they  
23 already can do that. But by just being certified as an  
24 acceptance tester you go through the training, and  
25 you're a quality assurance acceptance test provider that

1 actually does -- their looking at projects, not just  
2 incentive projects, but all projects.

3 MS. CUNNINGHAM: Maybe that's part of a fast  
4 track. If you have that certification, then this  
5 documentation carries more weight, so that's part of it.

6 MR. THOMAS: I would just say, though, that  
7 getting certification as an acceptance tester, which is  
8 really geared around, primarily around lighting  
9 controls, is overkill when it comes to what is that  
10 lamp, and what's the wattage of that lamp, when you take  
11 it down and you look at it, and you can photograph it  
12 and the ballast. That doesn't take \$3,500 worth of  
13 specific controls training.

14 That's part of the training that you get when  
15 you're a C-10 electrician or you're a general  
16 contractor. You have the capability and the knowledge  
17 to verify that that's what it is.

18 MR. STRAIT: All right, we have a couple of  
19 comments. We have a person in the room with their hand  
20 raised and then I've got a couple of people that have  
21 raised their online, over here.

22 MR. KOTLIER: Okay. Well, first of all, my  
23 name's Bernie Kotlier and I'm the Executive Director of  
24 the California Labor Management Cooperation Committee,  
25 and I represent over 30,000 electricians. And I

1 represent thousands of electrical contractors.

2           And first of all, I'd like to speak to this  
3 issue of certification of electricians and the license  
4 of a C-10 contractor. That does not mean you're an  
5 expert on lighting. And it does not mean that you're an  
6 expert on safety.

7           And let's put this whole thing in perspective.  
8 We're all trying to figure out how are we going to  
9 verify this? How are we going to verify this baseline  
10 to, the question a number of times.

11           And it's really about whether or not -- now,  
12 I'll be very blunt here. People are dancing around,  
13 well, they don't want to say that somebody's going to  
14 cheat and somebody's going to -- that's nonsense.  
15 People do it every day.

16           We have building inspectors in every  
17 jurisdiction, in every state in this nation. Why? Even  
18 in states that have had, during the death of the budget  
19 or the financial crisis, nobody laid off their  
20 inspectors or closed their building departments. Even  
21 in very conservative states that want to streamline, we  
22 have never laid off our building inspectors.

23           Why? Because we cannot trust people to give you  
24 the actual, honest story about what they're doing when  
25 money is involved. Now, that's clear. We're dancing

1 around this issue and we're debating it. Well, should  
2 we have pictures, should we have signed forms?

3 If pictures, or signed forms, or any of those  
4 things were to actually work to determine what the real  
5 baseline is, we would see this in building departments  
6 all over the country and replace them. Billions of  
7 dollars would be saved. But we don't see this in one  
8 jurisdiction anywhere. So, this is a bunch of nonsense.

9 And I'll tell you what else is a bunch of  
10 nonsense is using utility formats, and utility procedure  
11 as the basis for statewide regulation. I have a lot of  
12 respect for our utilities and for contractors who do  
13 work for them, but they do not make up the State of  
14 California. And frankly, utilities are not always  
15 correct or accurate.

16 There are more than a dozen studies, and we can  
17 supply them to the Commission, that talk about the loss  
18 of energy savings in utility programs. An infamous one  
19 is one that Lawrence Berkeley National Lab published a  
20 number of years ago. And, Kelly, I know you're familiar  
21 with a bunch of these studies because you were at the  
22 CLTC.

23 And these studies say very clearly that many, a  
24 high percentage of these jobs do not save the calculated  
25 savings. And the reason is because the jobs are not

1 done right.

2 One study said that over 90 percent of the  
3 utility incentivized HVAC projects did not even meet the  
4 code. Now, what does that mean? They didn't even have  
5 a permit because, as Tom said, they weren't even  
6 required.

7 So, you know, let's be honest here and let's be  
8 frank about what is required. We have to see eyes on  
9 the job. Pictures and people signing things, they will  
10 do that if they can save money. It is a conflict of  
11 interest, just like it's a conflict of interest to sign  
12 any form, or take any picture to meet a safety code.  
13 And we don't do that anywhere in the country. We have  
14 eyes on the job.

15 The eyes on the job have to be before the job,  
16 on the baseline, they have to verify what is there, then  
17 they have to verify what was put in, and they have to  
18 verify the calculation.

19 And we already have a large group of people who  
20 are trained and certified to do that. And the Energy  
21 Commission, in its wisdom, required it and they have  
22 been trained and certified.

23 And the idea that we're going to now start  
24 another program to train and certify contractors, I'm  
25 sorry, Kelly, I think is just, once again, a lot of

1 nonsense. We have the people, they're ready to do this  
2 job. We need them to do the job. And we need to stop  
3 fooling ourselves that pictures and a signature on a  
4 form is going to do this. It's nonsense. We have to  
5 have eyes on this job, both ends, and on calculations.

6 MR. THOMAS: Why aren't they on the jobs, now?

7 MR. KOTLIER: Excuse me?

8 MR. THOMAS: Why aren't the eyes on the jobs,  
9 now, for these lighting retrofits?

10 MR. KOTLIER: Well, let's talk about that.

11 MR. THOMAS: Let's ask the --

12 MR. KOTLIER: Well, no, let's talk about that.  
13 Because, you know, this whole new code has gone in a  
14 completely new direction.

15 MR. THOMAS: Well, I'm talking about the 2013  
16 Code.

17 MR. KOTLIER: Yeah, well, I'm talking about  
18 that, too. The 2013 Code required lighting, advanced  
19 lighting controls. It required acceptance testers to  
20 inspect those jobs and make sure that the controls were  
21 functioning and we really saving the energy. So, it's  
22 the net result that we were looking for.

23 Now, what we're talking about is an option where  
24 you can skirt the advanced the controls by putting in  
25 more efficient lamps, either 35 percent or 50 percent.

1           So now, the baseline is the critical aspect  
2 because it's the change. In the current code it's the  
3 end product that's of concern.

4           And we did some other things changing from 2013  
5 to 2016. We eliminated this requirement for advanced  
6 controls by allowing an opt out. That also allowed us  
7 to opt out of automated demand response. It allowed us  
8 to opt out of daylight. It allows us to opt out of  
9 controls on stairwells and corridors.

10           We are potentially losing a huge amount of  
11 energy savings and we're basing this new code on the  
12 fact that we're going to get this energy savings by  
13 having 35 or 50 percent more efficient lamps.

14           So, really, it's all on this now. It's all on  
15 these lamps. And we're kidding ourselves if we think  
16 that people are not going to cheat to avoid this opt  
17 out. And because it's all on these lamps, we have to  
18 make absolutely sure that we're getting all of that  
19 savings.

20           And the only way we're going to do that is to  
21 have eyes on the baseline, eyes on the calculations, and  
22 eyes on the final product, and signed off by a third-  
23 party, an independent. And those are acceptance testers  
24 and we have them. That's all I have to say.

25           MR. STRAIT: Just prior to -- so why we've

1 invited the utilities to sit on the panel. Because we  
2 rely on a lot of forms for our general processes of  
3 compliance, we've got 100 some odd forms that we publish  
4 for different aspects of buildings. Because they're  
5 currently collecting data about lighting, they might  
6 have some insight into what data we should be collecting  
7 on the forms.

8 That's not to say that we should or shouldn't do  
9 a second stepping, but that's part of the expertise we  
10 have --

11 MR. KOTLIER: I would prefer the CEC to those  
12 studies that showed all of the utility incentivized  
13 programs over the last 20 years, there's over a dozen  
14 cites that show that they did not meet the requirements.

15 And specifically, the LPNL study that said 90  
16 percent didn't even meet code. So, yes, our utilities  
17 are trying their best. But utility formats and utility  
18 procedures are not the ones that we should be apply to  
19 the whole State. Because, frankly, they have enough  
20 work. And there's a whole body of academic research  
21 that supports that. I'm sure the Commission is familiar  
22 with it. If you're not, we can forward those studies to  
23 you.

24 MS. CUNNINGHAM: However, I'm working on the  
25 Compliance Improvement Team because we have created a

1 team to help improve the things that were documented  
2 some time ago. So, there are processes that are  
3 evolving. And we also hope to learn from what's  
4 decided, so it's an exchange.

5 But the team that was created to improve things  
6 responded to those studies. So I'm hoping that going  
7 forward, then the next evaluation will show improvement.  
8 And I'm not going to derail it any further.

9 I did want to point out, though, that in the  
10 first column, under new option, 130.1(c) is still  
11 required. So, acceptance test technicians will still be  
12 on those products with the 30 to 50 percent reduction  
13 for all of the occupancy and time-based controls. So,  
14 there is still that.

15 MR. KOTLIER: Yeah, but not for the baseline.

16 MS. CUNNINGHAM: No, no. Sure.

17 MR. THOMAS: Barry, we have an extra mic here.  
18 Would you mind?

19 MR. KOTLIER: No, I'd love a mic.

20 MS. CUNNINGHAM: But I'm just clarifying that in  
21 terms of stairwells and corridors, it still could be  
22 required and we're happy about that.

23 MR. KOTLIER: You know, I'm really happy that  
24 the utilities are improving their procedures and  
25 processes, Kelly. I'm really happy that the -- and I'm

1 happy you're at PG&E because I know your background.  
2 And I'm happy that you're having the influence to  
3 improve those processes and procedures. And that's  
4 exactly why we shouldn't be basing what we're doing as a  
5 State on what the utilities have done.

6 MR. STRAIT: We do have a couple of call-in  
7 speakers that have raised their hands. And we have one  
8 person who has raised their hand by chat, who is not  
9 attending by phone.

10 I'm going to start with that chat question. I'm  
11 going to read it for the benefit of the people that are  
12 listening. This is from someone named JP.

13 They asked, "Is there any objection to delaying  
14 the existing lighting verification until final  
15 inspection? For example, at final they leave all  
16 luminaires on site. An inspector then verifies that the  
17 original luminaires match the stock on the plans and  
18 docs."

19 MR. THOMAS: I could respond to that. It's not  
20 really feasible. Let's say you're a small retailer and  
21 you don't have the floor space to keep -- I mean, you  
22 have enough space for some replacement stock of the  
23 lamps you have, let's say they're luminaire fluorescent  
24 or whatever, but you -- that would derail the current  
25 process of how lighting retrofits are done.

1           The technicians get up there, they pull the  
2 lamps down, they go into a barrel for recycling. That  
3 barrel may already have lamps from the previous job  
4 because they only get picked up when they're full.  
5 Ditto for ballasts and so forth.

6           So, it's not feasible to impose that burden on  
7 the customer. Hey, just keep this stuff around and, you  
8 know, don't mess it up until sometime in the future when  
9 a building inspector comes to eyeball it. That wouldn't  
10 really be workable.

11           MR. STRAIT: Okay. Also, we have one person  
12 that's saying they have to leave in ten minutes and they  
13 have some suggested solutions.

14           Behzad, can you identify yourself again and then  
15 speak.

16           MR. EGHTESADY: Yes, my name's Behzad Eghtesady,  
17 with City of Los Angeles, and Chief Electrical Engineer.  
18 I have two suggestions and solutions to the issues you  
19 have. And I think that then, depending on the case at  
20 hand, say if it's an entire luminaire alteration,  
21 luminaire modification in place, or wiring alteration  
22 there's actually two ways I see that it's possible that  
23 we can have this enforcement in place.

24           One is, like in many other jobs that takes place  
25 is they do have one set of plans that shows existing

1 condition or they call it -- I forgot what they call it.

2 MR. THOMAS: Baseline?

3 MR. EGHTESADY: What's that?

4 MR. THOMAS: Baseline.

5 MR. EGHTESADY: Yeah, they will have one that is  
6 existing and they show one that's going to be altered.  
7 They show that to an enforcement agency through a plan  
8 review process and then they go through their review  
9 process, whatever that it is. And they show the form as  
10 it is, you know, whatever the percentage is. And so,  
11 that's one way to do it and that probably could work  
12 with all the cases.

13 The other option probably would be is since  
14 you're going to have an acceptance tester or testing  
15 most likely take place at the end, why not have it at  
16 the beginning. In other words, a person would come into  
17 the job site that is hired by whoever is going to do the  
18 work, make an assessment of what is the existing  
19 condition of the lighting and make a chart, a table of  
20 some sort, identify in each space what it is. Go  
21 through, then sign it, and attest that that's accurate  
22 to his understanding. And then whoever's going to come  
23 through the permitting process bring that, because it's  
24 the person or the owner that's hired this person, bring  
25 that along with him, with the form that would be

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1 developed by the State showing, okay, this so many lamps  
2 are complying with so many wattage and whatever. And,  
3 since already been verified by someone, who's going to  
4 eventually look at this at the end, it closes the loop  
5 at both ends.

6 In the meantime, when the permit is issued, the  
7 inspector on the job site can verify the document they  
8 have on hand, and the accuracy of it. And then, of  
9 course, the acceptance tester at the end verifies, and  
10 see, okay, before and after. And it has to be the same  
11 acceptance tester that started the process with the  
12 space. That could close the whole gap and keep the eye  
13 on the job. And when you have more than one eye, then  
14 you can eliminate errors.

15 But if you only rely on pictures, forget it. I  
16 have seen that and I've heard that many times people  
17 substitute pictures from one place to another, and it's  
18 very difficult to keep track of it. Don't go there,  
19 it's a trap the way I see it.

20 The best thing is to do a closed loop, and you  
21 have it in your hand. So, we can do either/or, or we  
22 can do a combination of both. So, you have options  
23 available to you, that's all I have to say.

24 MR. STRAIT: Thank you.

25 MR. THOMAS: Behzad, could I comment on that?

1 MR. EGHTEESADY: Sure.

2 MR. THOMAS: First, right now, there's not a  
3 plan check part of the process for lighting alterations.  
4 So, you'd be starting a new process on the front end.

5 Second of all, for lighting alterations in the  
6 existing building market you're not typically having --  
7 I mean, I'm not saying it doesn't happen, but you're  
8 typically not having inspectors on site for these types  
9 of jobs.

10 The second, the next part of it is for  
11 acceptance testers, if there aren't any changes to  
12 controls and that happens on an appreciable number of  
13 jobs, a certified acceptance tester doesn't have to be  
14 on site. But if you actually -- so, you'd be doubling  
15 the cost, at least, for acceptance testing and it's  
16 already been established that for smaller jobs it's not  
17 cost effective. And it would be even --

18 MR. EGHTEESADY: Well, I kind of disagree with  
19 what you're saying. I think if you have a scenario  
20 where most of the times all you're doing is just  
21 replacing lights, maybe true. But I would say 80 to 90  
22 percent of the time there are some sort of controls  
23 issue involved in the process.

24 So, the fact that an acceptance tester gets  
25 involved, I would say 80 to 90 percent of the time most

1 likely will be --

2 MR. THOMAS: Well, let's say that's true, but  
3 that's on the back end. If he's having to come out --

4 MR. EGHTEADY: I understand. I understand.  
5 What I'm saying is you can change -- I understand what  
6 it is now and how it is done. You're looking and asking  
7 for solutions, so I'm giving you solutions.

8 MR. THOMAS: Okay.

9 MR. EGHTEADY: You can utilize your resources  
10 for what it is now in different ways to close the  
11 loophole. And that eliminates a lot of enforcement  
12 issues, gaps, contractor issues, whatever the case may  
13 be.

14 If you have eyes on that, I hear that and I  
15 agree with that. If you don't have eyes on the job,  
16 then you can go awry and it would be out of control.  
17 That's all I have to say. So, there are different ways  
18 to do it. You can do a combination of those, you can do  
19 one or the other. You know, it's entirely up to you.  
20 That's all I have to say.

21 MR. ENSLOW: Yeah, this is Tom Enslow, again.  
22 I'd like to, you know, just respond to Gene. Yeah, we  
23 don't have people coming beforehand. We don't have  
24 acceptance testers go beforehand, now. But again it's  
25 because the existing requirements, you know, everything

1 was looking at what happened after installation. And  
2 this was our concern with the get go, with this new  
3 pathway. It's now we have a baseline issue.

4 And because we have a baseline issue, now you  
5 have to have someone come in beforehand. I mean, it's a  
6 -- I mean, this is what we said ad nauseam as this was  
7 being proposed, why we didn't think this was a good  
8 pathway because it created this new scenario. And it is  
9 a new scenario and now we have to address it because it  
10 has gone into the code.

11 MR. TAYLOR: So, Tom, do you think it would be  
12 cost effective for somebody to come in beforehand? Is  
13 that what you're talking about?

14 MR. ENSLOW: I think it's not that big of -- I  
15 think what needs to happen, because what -- well, this  
16 has to happen for someone to determine whether they even  
17 meet this is, you know, before the acceptance tester  
18 comes he's provided, you know, copies of the model  
19 numbers, the calculations and this stuff. So, his  
20 visits, you know, could be a ten-minute visit where he's  
21 randomly confirming some of the model numbers. And, you  
22 know, it could take five minutes. I mean, it's not a  
23 lot that has to happen in the pre-visit.

24 MR. THOMAS: That's a very, frankly, unrealistic  
25 estimate of the time involved. And you'd be adding, at

1 a very minimum, several hundred dollars onto the cost,  
2 which would kill a small job.

3 Just imagine the logistics that were suggested,  
4 where you're supposed to have the same acceptance tester  
5 on the front end, and now it has to be the same  
6 acceptance tester on the back end. What if that  
7 acceptance tester is busy on another job, in another  
8 city.

9 MR. KOTLIER: Well, that was one proposal, it  
10 wasn't our proposal.

11 MR. THOMAS: Right, but you're basically  
12 doubling the cost for acceptance testing.

13 MR. KOTLIER: Well, hold on, hold on. Gene,  
14 that's not correct. And the reason it's not correct,  
15 and I can speak from authority here because we have over  
16 -- you know, we have hundreds and hundreds of members of  
17 our organization who have passed this test and who are  
18 certified. And we have contractors who do this every  
19 week.

20 And the acceptance test process right now is a  
21 complicated and more expensive, and more time consuming  
22 process than we're talking about because they are  
23 checking advanced controls and they're checking all of  
24 the system.

25 What we're talking about is using the same

1 acceptance tester, but not the same acceptance test.  
2 We're talking about bringing someone in whose familiar  
3 with these systems, and familiar with lighting, to do a  
4 quick check of what the baseline is. That's a very  
5 different and completely different amount of time, and  
6 completely different amount of resources. It will be  
7 much less expensive.

8           So, the idea that we're just going to take the  
9 acceptance test and double it, because they're coming at  
10 the beginning, is not correct.

11           MR. THOMAS: So, but you would have no objection  
12 if the installation contractor is a certified acceptance  
13 tester, of having them do that on the front end.

14           MR. KOTLIER: The current acceptance test  
15 regulations allow for a contractor to self-certify, if  
16 they're a certified employer and if their field tester  
17 is a certified tester with the State.

18           MR. THOMAS: So, that sounds like a yes.

19           MR. KOTLIER: Well, of course it's a yes.

20           MR. THOMAS: Okay.

21           MR. KOTLIER: And we all have contractors who do  
22 that. But, of course, they are State trained, State-  
23 authorized training, State-authorized certification.  
24 And they have to do this all under the penalty of,  
25 obviously, State sanctions if they misrepresent.

1 MR. THOMAS: Sure.

2 MR. RANDOLPH: Gene, you know we have ICF  
3 International, who's the third-party tester of the  
4 acceptance testers.

5 MR. THOMAS: Sure.

6 MR. RANDOLPH: So, we have this extra layer.  
7 Now, we would add more to ICF's job to verify that the  
8 acceptance tester did the acceptance test correctly. I  
9 mean, we wouldn't go way, way down the line with this,  
10 but somebody has to do the verification process.

11 MR. THOMAS: Peter, I think it might be  
12 instructive to take a look at that spread sheet, just so  
13 that somebody can visualize what we're talking about,  
14 and maybe balance in their own minds if that seems like  
15 reasonable documentation.

16 And this is just part of the spread sheet that  
17 we sent to PG&E for one of our lighting retrofits. So,  
18 it's got the type of building, it's got a code that's  
19 assigned, a zip code, the name of the area, the existing  
20 luminaire type and wattage. So, 400-watt metal halide  
21 in one lamp. That's the tech workbook ID, which is  
22 where the wattages come from. So, it fits your  
23 description very, very detailed and it's not just the  
24 nominal watts, it's the system watts that come from the  
25 tech workbook, which is overseen by CPUC.

1           There's the existing quantity and the wattage of  
2 the existing luminaires. And then you've got the  
3 replacement luminaire name, so LED high beam, 99-Watt  
4 5000 K CRI Lithonia. We've got a cut sheet for that.  
5 Technology ID from the lighting workbook. A description  
6 of that in detail. New quantity of lighting measures,  
7 new wattage, percentage reduction.

8           Is that reasonable to -- in terms of a level of  
9 documentation, irrespective of whether you add pictures  
10 to it or not? Is that a reasonable assumption of what's  
11 existing?

12           MR. RANDOLPH: But you're making Bernie's point.  
13 I can go out, it would take me as long as it took me to  
14 get on a scissor lift and go up and down a scissor lift,  
15 a couple of light fixtures. I could do that  
16 verification in under a half hour. Now, maybe I'm  
17 faster than everybody else.

18           But if you have a scissor lift on site, which  
19 you had to have to do this, anyway, go up a scissor  
20 lift, take a look. I mean, half an hour's max, that's  
21 it. And I can do a verification, and I'm not the  
22 smartest guy, I'm not the dumbest, either.

23           MR. THOMAS: Well, certainly. I mean, nobody  
24 would say that you couldn't do that as quickly as  
25 anybody could. But the fact is you're not doing them

1 now on the post part of it.

2 MR. RANDOLPH: No, but at the end of it we do a  
3 specialty -- the acceptance tester goes out at the end  
4 and verifies that the fixtures that you say you  
5 installed were installed, and that the fixtures meet the  
6 current Title 24 requirements for watts-per-square foot.  
7 And that's all been in the plan check process  
8 verification with the city, when you issue -- when you  
9 apply for a permit.

10 MR. THOMAS: Then I'm getting confused again,  
11 because you're mentioning plan check.

12 MR. RANDOLPH: Well, let me -- what I'm saying  
13 is when I do a plan check -- if this job came out to the  
14 City of San Jose, and you applied for a permit to do  
15 this job, I will look over your outdoor lighting  
16 acceptance test forms, NRCC forms. I will verify that  
17 the form meets the watts-per-square foot. You're using  
18 that fixture, it's 104 watts that you've done in your  
19 calculation, so I have your hardscape, or whatever it  
20 is. I verify that your watts-per-square footage are  
21 within the 0.14 allowed watts-per-square foot.

22 For hardscape, I verify all those things and I  
23 verify that the person who designed it, and the  
24 responsible designer signed those documents. That's  
25 part of the plan check process.

1 MR. THOMAS: Now, all that will still happen.

2 MR. RANDOLPH: All that would still happen. The  
3 acceptance tester in the project, he goes out and he  
4 verifies that what I -- what you've told me you put in  
5 is what you actually put in. All we're talking about  
6 doing now is having him go out ahead of time, run up a  
7 scissor lift and verify that what was there before was,  
8 in fact, a 458-watt metal halide.

9 MR. THOMAS: And just that example right there  
10 is a \$300 to \$400 charge if there's not -- doesn't  
11 happen to be --

12 MR. RANDOLPH: Well, nothing's free. It cost  
13 you hundreds of dollars to get a permit. Do you blow  
14 off a permit?

15 MR. KOTLIER: I'd like to jump in on this. You  
16 know, cost effectiveness sometimes seems to be --

17 MR. LEE: Turn on your mic.

18 MR. KOTLIER: Oh, sorry. You know, I hear cost  
19 effectiveness all the time. And I hear, well, it's  
20 going to be a few hundred dollars here or a few hundred  
21 there, or whatever. But what I don't hear in these cost  
22 effectiveness discussions is the cost to the State if we  
23 don't save energy.

24 All of these energy efficiency programs that  
25 we're doing, whether it's lighting, or HVAC, or anything

1 else flow from AB 32, and SB 350, and the other energy  
2 efficiency legislation. That's why we're doing all this  
3 and we shouldn't be forgetting it.

4           And the reason that we're doing it is because of  
5 climate change. Now, how much is it going to cost the  
6 State if we lose the Sierra snowpack? How much is it  
7 going to cost the State if we lose our agriculture in  
8 the Central Valley because we don't have a snowpack?  
9 How much is it going to cost the State if our beaches  
10 are all under water? How much is it going to cost the  
11 State if communities along the waterfront, like San  
12 Jose, with a million people, is under water?

13           We have to put this in perspective. A few  
14 hundred dollars to save gigawatts of energy by doing a  
15 job right is a very small amount when we're talking  
16 about our State goals, and we're talking about the  
17 ultimate cost of what can happen if we don't save  
18 energy, and we don't meet the directives that we've had  
19 from the Legislature and the Governor to save energy.

20           MR. TAYLOR: Yeah, absolutely, Bernie, we need  
21 to look at the -- keep this in perspective and make sure  
22 we compare exactly what we're talking about.

23           As you know, the Energy Commission is required  
24 by law to make sure our standards are cost effective, so  
25 that's why we keep coming back to it.

1           In this context, in this workshop we're focused  
2 on that 50, 35, that option under this new lighting  
3 alterations compliance for 2016 Standards. We're trying  
4 to figure out what kind of documentation is cost  
5 effective, what kind of program or procedure is cost  
6 effective to make sure that the building departments are  
7 capable of ensuring compliance with this --

8           MR. KOTLIER: But what we're proposing is not  
9 that the building departments can do that. What we're  
10 proposing is that the building departments, what we  
11 observed and heard from the building departments is that  
12 they can't do it. So, we're talking about an eyes-on-  
13 the-job mechanism that is done by acceptance testers,  
14 then who have delivered to the building departments so  
15 they don't have to spend more time, and energy, and  
16 resources, right.

17           MR. THOMAS: So, I was just going to ask  
18 Gabriel, is it out of scope of this discussion, today,  
19 to propose imposing a requirement for front-end  
20 acceptance testing into the compliance process, that's  
21 not in the code?:

22           MR. STRAIT: The answer to that is, yes, that  
23 would be out of scope. That is something that we can  
24 consider in 2019, but would require a change to the  
25 regulation to do that.

1           MR. KOTLIER: Well, wait a minute, I thought  
2 this meeting was about enforcement.

3           MR. STRAIT: The meeting is about enforcement.  
4 I'm saying one of the limits is in order for us to  
5 impose an additional cost of paying a person to come out  
6 to offer an independent inspection, in order for us to  
7 mandate that, that has to go through and be part of our  
8 Code. We have to work with what's on the books, adopted  
9 currently.

10           So, this was a question of, you know, what kinds  
11 of documentation, what kinds of interaction with the  
12 building departments. But requiring and mandating  
13 people to bring another person on site and engage in an  
14 independent inspection is not currently part of it.

15           MR. KOTLIER: So, all of this documentation is  
16 out of scope, but filling out forms, and taking  
17 pictures, and all of that other stuff which still costs  
18 money, and time, is in scope?

19           MR. STRAIT: Because we're talking about what  
20 kinds of mandatory requirements exist. So, if we're  
21 talking about creating a mandatory third-party  
22 inspection requirement, that would require changes to  
23 regulation.

24           MR. KOTLIER: Well, I'm sorry to say that -- I  
25 mean, we don't agree.

1 MR. STRAIT: Okay.

2 MR. KOTLIER: The International Brotherhood of  
3 Electrical Workers and the National Electrical  
4 Contractors Association do not agree with that  
5 interpretation.

6 MR. STRAIT: Okay. And I can --

7 MR. KOTLIER: If this is an enforcement  
8 discussion, it's an enforcement discussion.

9 MR. STRAIT: Right.

10 MR. KOTLIER: And if the CEC is going to propose  
11 some type of enforcement that is not going to work, then  
12 why are we even having this discussion?

13 If eyes on the job are what all these people are  
14 saying is needed, including the building inspectors from  
15 all over the State, from major cities and major  
16 counties, then it seems to me that should be part of  
17 this discussion.

18 MR. STRAIT: It absolutely can be. And we can  
19 do --

20 MR. KOTLIER: Okay.

21 MR. STRAIT: Keep in mind we are beginning the  
22 2019 process, so part of what comes out of this meeting  
23 can certainly feed into that process.

24 MR. KOTLIER: No, I'm talking about 2016.

25 MR. STRAIT: Right.

1 MR. KOTLIER: I'm not talking about 2019.

2 MR. STRAIT: Okay, I'm saying if we end up  
3 arriving at solutions that do require changes in code,  
4 we can begin the process of making those changes to  
5 code. That's one possible outcome of this meeting.

6 MR. RANDOLPH: Is the 35 to 50 percent already  
7 in the 2016 regulations?

8 MR. STRAIT: Yes.

9 MR. RANDOLPH: With no enforcement procedures?

10 MR. STRAIT: Again, when we talk about what  
11 enforcement procedures, there are things we can do and  
12 can't do without changing code. That's all I'm saying.

13 MR. RANDOLPH: So right now the 2016 Code says  
14 that's in the code, but there's no enforcement  
15 procedures decided, yet?

16 MR. STRAIT: We are at this workshop to define,  
17 to decide what functional enforcement would make sense.  
18 I'm saying mandating additional, independent inspection  
19 would not be in the code, that's what I'm saying.

20 MR. SHIRAKH: I think Peter is correct. This is  
21 Mazi Shirakh. When we adopt the code, if we want to  
22 mandate something like, you know, another inspection of  
23 the baseline, ideally we should have added that cost to  
24 the measure cost number in doing the lifecycle costing  
25 analysis. That was never proposed and that cost was

1 never included in our cost effectiveness analysis.

2           You know, if you want to impose that later on,  
3 then that's going to be in conflict with the measure  
4 that was adopted because it did not include -- the idea  
5 that's being brought up here was never brought up during  
6 the proceedings when we were developing the language.  
7 So, I think that's creating a conflict for us and it  
8 would necessitate, probably, a change to the  
9 regulations.

10           MR. RANDOLPH: Thank you.

11           MR. ENSLOW: I would note that, you know, this  
12 issue was raised previously during the proceedings to  
13 adopt this, and the commitment that was made to us by  
14 the Commission and the administration that was to work  
15 with us on the enforcement issue. And so, we are  
16 looking for meaningful enforcement measures to be  
17 adopted.

18           MR. BARROW: My name is Bret Barrow. I  
19 representation the National Labor Contractors  
20 Association. I'm representing 1,200 electrical, union  
21 contractors throughout the State.

22           And I just want to concur with what the LMCC has  
23 stated. We were actively participants in the code  
24 update, the 2016 Code update, and one of the key  
25 provisions in there we brought up repeatedly that we're

1 going in a new direction with raising these percentages,  
2 and that we're going to open doors for maybe a path of  
3 least compliance. And we repeatedly stated that an  
4 enforcement was going to be key, verification is going  
5 to be key. And we were repeatedly told that that would  
6 be addressed going forward, in very short order.

7           And so I do want to say we do appreciate the  
8 Energy Commission for calling this workshop to address  
9 that issue, specifically. But we do feel that  
10 benchmarking is not outside of the scope of what we're  
11 discussing today because we've gone to, you know, a  
12 situation where we have to establish a benchmark in the  
13 beginning to know where we're going. Because we're  
14 changing the structure. We're not going to a world  
15 where we only verify at the end, like things have been  
16 done. We need to make sure that those numbers match up.

17           So, you know, I just want to support what  
18 they're saying and say that, you know, we had come into  
19 this thinking that the commitment was that we would come  
20 to some kind of resolve that may include some type of a  
21 verification by those who are trained and qualified to  
22 do that kind of work.

23           MR. STRAIT: Sure, I think that might be the  
24 place where we do agree. That the approach that we're  
25 taking here is that there's some amount of verification.

1 And the discussion we're having, now, is who is  
2 qualified to do that?

3 And I know that from the perspective that we had  
4 in getting to this point, we weren't thinking that that  
5 person needed to be a third party in order to count the  
6 number of luminaires and write down the model numbers  
7 that those luminaires have.

8 That might be a mistake on our part. Certainly,  
9 as people have said, there's a concern that folks have  
10 motivation to fudge the numbers or fudge the information  
11 that they're submitting. That's just universally, any  
12 form that we ask anyone to fill out related to  
13 compliance, not just for lighting or for any aspect of  
14 our building.

15 So the additional independence of the ATC  
16 program is certainly a virtue. But do we say that you  
17 need to have those qualifications in order to be able to  
18 count luminaires. That's where we kind of had a -- I  
19 think have a sticking point at the moment.

20 We are hearing very clearly that that's  
21 something that that's something that we absolutely need  
22 to consider. That maybe that does need to be an  
23 independent person. Maybe that adds some additional  
24 security.

25 And obviously, as a part of the process, we'll

1 have the ability to observe what this transforms into.

2           Either way, regardless of whether that person is  
3 an ATCP or someone that's otherwise involved in the  
4 project, we also need to establish the very basic  
5 components of compliance. Do we use a form? If we do,  
6 what does that form have on it?

7           So, I think there is still various work that we  
8 can do together and collaborate on. There are a lot of  
9 lessons learned. And if we want to discuss requiring  
10 that that person possess a set of certifications that  
11 have additional cost associated with them, we can look  
12 at how that would be accounted for in our regulations  
13 moving forward.

14           I do know that one thing that's challenging  
15 about lighting, in particular, is that as this  
16 technology changes, and we have more, and more efficient  
17 LEDs, the savings that caused by some of these measures  
18 becomes thinner and thinner. Which means our ability to  
19 justify an additional cost starts to evaporate.

20           And so, we end up in a challenging position like  
21 having to raise on thresholds. Because this lighting is  
22 becoming so efficient that when you have an automated  
23 control process, it's not saving half as much energy as  
24 an assumption of some amount of incandescents on site,  
25 or some amount of inefficient lighting on site.

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1           And in addition, when we talk about existing  
2 controls, because we've had control requirements now on  
3 the books for a while, some of those controls, like the  
4 bi-level switching, is going to be present on a lot of  
5 jobs. Certainly not all. But a lot of jobs you're  
6 going to be walking in and not have to update those  
7 controls to comply, even if it's 2013 requirements that  
8 say here's your area controls, here's your shutoff  
9 controls, and as long as you've got two switches on the  
10 wall, like we have in the back of this room here, you  
11 don't have to touch those controls that are already  
12 compliant.

13           So, I know that there's going to be a number of  
14 challenges with figuring out what the role of ACTPs  
15 specifically are on these projects. I do like the  
16 concept that they can become involved early, if they're  
17 going to be involved later, anyway. But we also have to  
18 be sensitive that there are a number of smaller projects  
19 where even a \$500 cost is going to make that project  
20 just not be as cost effective.

21           And in those contexts, we have only a limited  
22 number of approaches. We can increase thresholds and  
23 say as long as you're doing the entire building, you  
24 have to do these things, but you have pretty high  
25 thresholds before you have to trigger those

1 requirements. Then we have people that stagger projects  
2 and we have otherwise people try to find ways around the  
3 regulations. Not by cheating, not my miss-documenting  
4 things, but by simply structuring the projects in a way  
5 that won't pull those triggers.

6 Bouncing back to why we wanted to pull everyone  
7 in the room, I want to be frank and open about what  
8 would require us to go back to regulations to make  
9 changes.

10 Making regulations in a vacuum is never a  
11 perfect process. It's why we iterate on them every  
12 three years. And we absolutely want to do as much as we  
13 can in the current cycle.

14 I'm not a lawyer so I know some of that we have  
15 to check with our legal staff to see what room we have  
16 for doing some of those measures. And to the extent we  
17 hit one of those barriers, we slate it now and so that  
18 we know that it's on the docket and can be addressed in  
19 the 2019 docket.

20 And because, and the last thing I would add is,  
21 the process for 2019 does start now. So, if we wait  
22 until we're a year and a half past this point to have  
23 this conversation, it may actually be too late for us to  
24 incorporate those concepts into the 2019 cycle. That  
25 was one of the challenges that we faced, that by the

1 time some of these concerns were raised in a comment  
2 period, after we have already done a lot of this cost-  
3 effectiveness analysis, where we would say either you're  
4 going to have to give us this pretty advanced cost data  
5 in order for us to satisfy requirements in the Warren  
6 Alquist Act, 25402, that limited our ability to be asked  
7 on these concerns.

8           So, please don't feel like because we're limited  
9 that we're not interested right now in working with you  
10 and hearing this feedback. And in pursuing some of  
11 those solutions and seeing what we can do to coordinate  
12 these regulations, possibly and change the regulations.  
13 We're also having to balance the equities and find out  
14 what those costs are and can we still satisfy our  
15 statutory requirements, knowing the direction lighting's  
16 going. And as it gives lower and lower power reduction  
17 even though that lighting's on full blast.

18           MR. THOMAS: Peter, a quick question, going back  
19 to Simon at the very beginning. I just noted down you  
20 said the 2016 standards are effective July 1st of 2017?  
21 Is that not January 1st, of 2017?

22           MR. LEE: January 1st.

23           MR. THOMAS: Okay, good. I wanted to make sure,  
24 all right.

25           MR. STRAIT: Oh, one thing I could also point

1 out there, we've got a lot participants, still, and a  
2 couple of people it looks like they had comments, but  
3 they had to leave. We are coming onto the lunchtime.  
4 We could break for lunch afterwards, or we could break  
5 fairly soon so we can get lunch, or we can power through  
6 it.

7 I'm going to put this question to the panelists  
8 in the room, what their preference would be, just since  
9 we're nearing the one o'clock and people are starting to  
10 get hungry. The last thing I want is for us to start  
11 getting more irritated with each other because we just  
12 happen to be -- so, is there a feeling on that?

13 MR. ENSLOW: Do we have more on the agenda or  
14 are we kind of wrapping up as it is?

15 MR. STRAIT: We did have some additional  
16 questions to prompt conversation, if the conversation  
17 didn't evolve organically. But, thankfully, the panel  
18 was a good panel and it evolved on its own.

19 So, if we wanted to come back and continue to  
20 have conversations, again, our role here is simply to  
21 receive your feedback, to hear from building officials  
22 what their difficulties are and what they need to do.  
23 To hear from your groups, to hear from installers.

24 We had hoped to get some building owners, but we  
25 weren't able to get everyone on the panel that we would

1 like.

2           We're receiving right now, so really it's driven  
3 by you, how much feedback you guys want to give. If you  
4 feel we're at a good place and we've got what you want,  
5 we also have the open process for submitting additional  
6 written comments, or additional studies you might have,  
7 up to the 23rd, if I'm correct.

8           MR. LEE: The 19th, yeah.

9           MR. STRAIT: Oh, yeah.

10          MR. ENSLOW: I'd be up for powering through, if  
11 people want to stay. How much longer are you talking  
12 about?

13          MR. STRAIT: It's entirely driven by you guys,  
14 so it's however much -- we will -- I'm willing to be  
15 here until six o'clock in the evening. But I'm not  
16 talking about you guys here.

17          MR. TAYLOR: Since I haven't been using my mic  
18 very much, my suggestion, and it's just a suggestion, is  
19 that we take a half-hour lunch break, and maybe let  
20 people hit the restroom, and feed the meters, and then  
21 come back and put another hour or so in, if anybody's  
22 willing to do so.

23          MR. ENSLOW: Well, my preference would be to  
24 kind of wrap it up. I mean, I know I have stuff this  
25 afternoon I need to get to.

1 I guess maybe we could just ask if there's  
2 anything -- how many people have something more to speak  
3 to? I though we covered our bases pretty well so far.

4 MR. STRAIT: Let me put that question to the  
5 folks online. If anyone online has any additional  
6 comments or questions they'd like to make, if you can  
7 please raise your hands? I'm not seeing any hands that  
8 are being raised.

9 It's entirely possible that people had comments  
10 that other people made for them. So, we had a very  
11 robust discussion.

12 MR. TAYLOR: I had a question for the panel. I  
13 think that the key concern here is cost effectiveness,  
14 at least from my perspective. And it's a little bit of  
15 an unknown.

16 What is the solution that we're trying to find?  
17 What is the problem that we're trying to find a solution  
18 for? So, we have this new approach, as has been I think  
19 well iterated, that conceivably requires a baseline  
20 knowledge.

21 The delta between that baseline and the end  
22 point is the savings. The cost is whatever solution we  
23 develop here today or over the next few weeks. The  
24 comparison between those two, that cost net savings is  
25 what's at issue.

1           So, the savings I think is really what I'm  
2 curious about. If we have a situation where we have,  
3 you know, a form, an attestation of some sort where the  
4 contractor's saying that they're installing something,  
5 and then that they put in a highly efficient product,  
6 and our inspections come along after the fact and  
7 determine that the highly efficient product's there, the  
8 controls that are required are operating correctly, et  
9 cetera, there's a risk that the original product was in  
10 some way less -- or was more efficient. Was more  
11 efficient than was claimed.

12           I'm trying to really wrap my arms around a real  
13 concept of what that delta is because it's not -- it  
14 requires so many assumptions, it's just not entirely  
15 clear to me.

16           MR. ENSLOW: I think I can address that quickly.  
17 I mean I think you're right, this is a new regulation so  
18 it's going to be a bit speculative as to what is the  
19 lost savings from the amount of people cheating.

20           We do know from some smaller studies, on  
21 lighting systems, that with incentives, without  
22 acceptance testing, they estimated -- I want to say they  
23 estimated about a 27 percent lost savings. And, you  
24 know, they're not getting what they expect.

25           And I don't think that's unrealistic to expect

1 something similar, you k now, here as far as lost  
2 savings.

3 But I'll tell you what we'll do, because we will  
4 submit comments by the 19th. And we'll try to talk with  
5 our experts, and people we know, and try to come up with  
6 some numbers for you. But, you know, it is going to be  
7 based on past experience, you know, and we're talking  
8 about moving forward. So, it's going to be some  
9 estimates.

10 But we do know that, you know, it's widespread  
11 noncompliance in the HVAC world and the lighting control  
12 world. You know, not always deliberate, but just in  
13 what we're getting. And this is why we think this  
14 baseline issue is important.

15 MR. KOTLIER: Just a comment about cost  
16 effectiveness. And, you know, once again I just have to  
17 repeat that when you have -- and Tom, I think Tom's  
18 reference and his memory's probably pretty good, but it  
19 was in the 20s somewhere. When you have that kind of  
20 lost savings, you know, a few hundred dollars to do a  
21 pre-check is very small. That's a very small cost.  
22 Because we're not just talking about the savings of that  
23 year. We have to keep in mind that these lighting  
24 systems that are installed are going to be in that  
25 facility for 10 or 15 years. Not just one year, not

1 just three years of the code cycle. They're going to be  
2 in there long term, year after year, after year.

3 And so, if they have put in a lamp, and I  
4 understand what you're talking about, if the net result  
5 is really efficient --

6 MR. TAYLOR: But the counter argument is that if  
7 you increase the cost of the project, then the project  
8 won't even go forward. And so that's --

9 MR. KOTLIER: Well, actually, that's what we  
10 already have with the advent of -- we've got a carve out  
11 that says 20 or fewer luminaires. We've got a carve  
12 out, now, that's up to 69. It was what, 40, or 30  
13 before?

14 MR. TAYLOR: Forty.

15 MR. KOTLIER: Forty before, and it's up to 60  
16 now. So, we've already got carve outs, expanded carve  
17 outs. We're not talking about the carve outs, we're  
18 talking about all the other jobs. We're not talking  
19 about the small jobs.

20 MR. TAYLOR: So, just to clarify, so in your  
21 opinion if a baseline -- if a third party were to go out  
22 to the project site prior to any work being done, and to  
23 establish baseline, you believe that would be 100  
24 percent effective or close to?

25 MR. KOTLIER: Well, you know, I would just

1 actually refer back to the Commission's decision to  
2 require acceptance testing. I mean, the Commission  
3 required acceptance testing for the 2013 Code because  
4 all the studies said that you need somebody to check  
5 this stuff to make sure it's there, it works right, it's  
6 performing properly.

7 MR. THOMAS: But that wasn't applied to a front-  
8 end baseline, and that need was not established for the  
9 current --

10 MR. KOTLIER: Gene, I'll remind you again, the  
11 need was not established because the 2013 Code focuses  
12 on what is the end product.

13 MR. THOMAS: Right.

14 MR. KOTLIER: So this code, which has changed  
15 everything, focuses on giving people an option out of  
16 those controls.

17 MR. THOMAS: Sure.

18 MR. KOTLIER: And therefore, if we're giving  
19 people an option to get a 35 or 50 percent more  
20 efficient lighting system, the critical aspect is how  
21 much are we saving? And that can only be determined by  
22 confirming the baseline.

23 MR. TAYLOR: It's just is it reasonable to --

24 MR. KOTLIER: I see, Gabe, you're struggling  
25 with this.

1           MR. SHIRAKH: Well, my question is if we go by  
2 that assumption that you need to verify the baseline,  
3 what should the qualification of that person be, and  
4 that's the key question.

5           MR. KOTLIER: We have it already. We have  
6 acceptance testers, they're already trained and  
7 certified.

8           MR. ENSLOW: But it's arguable that that level  
9 of expertise is needed to count light and record the  
10 wattage.

11          MR. SHIRAKH: So, that is the question. What  
12 level of expertise --

13          MR. THOMAS: And that's what we're talking  
14 about. We're talking about counting lights and writing  
15 down --

16          MR. ENSLOW: The issue isn't the level of -- the  
17 issue isn't the level of expertise. The issue is that  
18 if people are going to be self-certifying, we're saying  
19 they need to be acceptance testers because then they're  
20 also going through third-party training. I mean, the  
21 certification provider is doing quality assurance on  
22 that.

23                 So we have, you know, it's not just the  
24 contractor self-certifying. It's that someone who works  
25 for the contractor is also licensed through someone else

1 who also has quality assurance and something else.

2           And if you did a third-party person, you know,  
3 maybe they wouldn't have to be an acceptance tester.  
4 Maybe they could have some other smaller, you know,  
5 level of certification. But if you do the acceptance  
6 tester route, it lowers the cost because you can have  
7 the contractor -- the contractor doesn't have to bring  
8 anyone else out on the site. It's their own workers who  
9 are already out there.

10           MR. KOTLIER: But we have these people out there  
11 already.

12           MR. ENSLOW: So, it's not an extra cost.

13           MR. THOMAS: We just think the contractors are  
14 entirely capable of doing that. And so, the scenario  
15 that you're talking about, you had asked Gabriel about  
16 what does it really mean for someone -- it would mean  
17 that the contractor would have to purposefully falsify  
18 that that's a first gen T-8, with a low ballast factor  
19 of so many watts. You'd have to purposely do that to  
20 try to get a bigger rebate and show artificial savings,  
21 which is going to result in the customer he's charging  
22 getting ticked off that the savings doesn't materialize.

23           MR. TAYLOR: Yes, that was kind of the crux of  
24 my comment a little bit there, because I was trying to  
25 imagine a real scenario where you have a contractor

1 who's going to attempt to circumvent in this context.  
2 And in all the scenarios I come up with it's not a  
3 hundred percent loss in savings. It's something in the  
4 middle. You know, they've got a 45-percent calculated  
5 savings and they kind of fudge a little bit.

6 I'm just trying to figure out exactly what we're  
7 trying to save.

8 MR. STRAIT: Well, I'd like to also add it  
9 sounds like what we're after isn't so much the  
10 qualifications of the ATCP program, but the  
11 accountability that's inherent in that program, just to  
12 clarify that point.

13 MR. KOTLIER: And, you know, I'd like to point  
14 out a few things. We discussed this question of savings  
15 with a long-term expert, Master's Degree, lighting  
16 engineer. And that engineer said that it's not just  
17 counting lamps and looking at the wattage. You have to  
18 know the specs of a lamp and the ballast before and  
19 after, and there are literally hundreds of different  
20 baselines, probably thousands of different baseline  
21 combinations.

22 And it's not just count a -- it's a more  
23 complicated calculation. And I'm not the expert, but  
24 that came from a lighting engineer who's been doing this  
25 for 20 years. That that savings calculation is not just

1 counting wattage.

2           So, I don't think that it's useful and helpful  
3 to reduce the skill level of this baseline inspector to  
4 somebody who counts lamps. That's not the case.

5           MR. STRAIT: One quick thing, Wayne, you have  
6 your hand raised. I'd like to remind you since  
7 you're -- I've left you unmuted so you can interrupt at  
8 any time.

9           MR. WIRICK: Okay, well, thank you. Wayne  
10 Wirick from the City of Sonoma. I'm representing some  
11 small jurisdictions throughout California, I think, in  
12 the way that I think. And I know there's -- that if we  
13 want a perfect solution here, yeah, we would have  
14 lighting acceptance technicians come in before the fact,  
15 and do this.

16           But I really think that in this particular case,  
17 the statute is under the criteria that the Energy  
18 Commission staff is working under with respect to cost  
19 effectiveness, that trying to require certified lighting  
20 acceptance technicians in this particular case is like  
21 using a sledge hammer to kill a mosquito. I just don't  
22 think that level of expertise is necessary. Are we  
23 going to get perfection? No, we're not.

24           And will we get noncompliance in some of these?  
25 Yes, we will.

1           But in our situation, we've had problems trying  
2 to identify for our small business communities lighting  
3 acceptance technicians that will do independent  
4 acceptance testing if they're not performing the  
5 installation work.

6           And that is really hard in rural communities,  
7 especially as you move farther north, or even in the  
8 middle section of California, for our people to find  
9 certified lighting acceptance technicians to come and do  
10 their work.

11           So, I think it's really important to consider  
12 these things and not just the savings that we might get  
13 from the energy savings, but the cost to these  
14 businesses and small business people that it costs to  
15 get these folks aboard and try to do that.

16           So, my proposal would be to, under this current  
17 regulations, the 2016 regulations, would be to allow for  
18 the baseline verification to be done by certified  
19 lighting acceptance technicians, electrical contractors,  
20 even energy application authors, and perhaps even  
21 lighting energy audits from PG&E or other utilities to  
22 establish the baselines and then work from there.

23           Now, is that going to be perfect? No, it will  
24 not. I mean, it's not going to be a perfect solution.  
25 But I don't think we're going to get a perfect solution

1 in this particular instance because, both for the  
2 constraints that the Energy Commission staff has on it  
3 with respect to implementing regulations, as well as how  
4 we're going to move forward.

5 I do want to commend the Energy Commission staff  
6 for providing an alternative path even though, clearly,  
7 it's -- you know, it's creating some new challenges for  
8 us. So, that's all I have to say, thanks.

9 MR. STRAIT: Thank you. I would point out one  
10 thing that might not be obvious in terms of ability to  
11 check after the fact. And that's that the 35 and 50  
12 percent levels are established to be equivalent to being  
13 under that 85-percent threshold for the light power  
14 allowance in buildings.

15 So in theory, and this is just in theory,  
16 someone could come in after the fact and do the lighting  
17 power density calculations and, based on that, know  
18 whether they've got that lighting power low enough as to  
19 where a percent reduction statement is reasonable. So,  
20 there is some after-the-fact verification that is  
21 possible as a comparison back to that lighting power  
22 allowance table.

23 So, there are a couple of different ways that we  
24 could be approaching this problem.

25 I like that we've narrowed in on what we're

1 looking at is someone's going to be -- ultimately, no  
2 matter what we do, someone's going to be putting their  
3 signature to the fact that they did something. And who  
4 should that person be and what qualifications should  
5 that person have, what accountability should apply to  
6 that person.

7           The ACTP program does have a large amount of  
8 accountability inherent in its members. But a  
9 contractor's is still also subject to some  
10 accountability under possession of that license, as are  
11 some engineers and such like that. So, we have a  
12 context to work in.

13           MR. THOMAS: That's a good point. And with  
14 respect to a contractor, would they be in jeopardy of  
15 losing their license if they were found to be purposely  
16 falsifying that kind of documentation?

17           MR. STRAIT: And I'm saying that I have the  
18 answer to that question. Just that there are frameworks  
19 to work in if we're focusing on accountability.

20           MR. KOTLIER: Once again, I just want to raise  
21 the -- I know I'm redundant here. But if a contractor,  
22 C-10 license or not, and I represent C-10 contractors --

23           MR. STRAIT: Sure, sure.

24           MR. KOTLIER: -- over a thousand of them. If  
25 their signature was good enough, we wouldn't need Scott,

1 we wouldn't need the City of L.A., the City of Santa  
2 Rosa, the City of San Francisco, or any other building  
3 department in this country. Signatures on pieces of  
4 paper and photographs are never accepted anywhere in the  
5 country.

6           So why is it when we have this precedent that  
7 every city has a building department to check what's  
8 being done, and they don't trust people's signatures,  
9 and they don't trust photographs, that we are all the  
10 sudden thinking this is a good idea? What is the basis  
11 for that?

12           MR. STRAIT: I'm not saying there's --

13           MR. KOTLIER: No, I'm just asking everyone. No  
14 one personally. But what is the basis for that?

15           MR. TAYLOR: I think the answer is cost  
16 effectiveness. As I tried to articulate a minute ago,  
17 we have a potential for savings here. We have  
18 identified a procedure that has been approved. So right  
19 now we're just talking about compliance documentation.

20           So, we have a given savings. It's a slight  
21 unknown. There's a given likelihood of risk of  
22 circumvention of that procedure, so there's a loss  
23 there. And we're talking about additional measures that  
24 we can implement, with no additional costs that would  
25 save that energy, that would save that cost.

1           So, the question is simply cost effectiveness  
2 there. And by statute, by law we're required to comply  
3 with that. So our analysis, for anything that we do  
4 here, has to show here's what we would say if we  
5 implemented this cost on the project.

6           MR. KOTLIER: Right, but the law also requires  
7 that we save a certain amount of energy. And I can tell  
8 you, from months and months of calculations, and we  
9 submitted all those calculations during the process, and  
10 we had very expert electrical lighting engineers do all  
11 those calculations.

12           The code went from 20-percent more efficient  
13 lamps to avoid controls, to 30 percent, to 35, and then  
14 50 because of those calculations. So, those  
15 calculations are absolutely essential to the cost  
16 effectiveness of all of this.

17           And if we are not meeting those because  
18 people -- because the baseline is not what they say it  
19 is, because they're not saving 30 or 35 percent, we're  
20 not meeting any of the requirements of this whole boat.

21           That is a cost effectiveness -- what I see is  
22 people looking at a couple hundred dollars, but not  
23 looking at gigawatts of lost energy. And the reason I  
24 can say that confidently is because of what I said  
25 before, there are numerous studies that have documented

1 the fact that our energy savings are not what they're  
2 expected to be. And particularly in terms of  
3 incentivized programs, utility programs, these are all  
4 based on calculations and we don't get them because we  
5 don't have people looking at them.

6 And people are just going to misrepresent. They  
7 do it all the time.

8 MR. SHIRAKH: So, if I understand the issue  
9 correctly then, what you're saying is if a certified  
10 acceptance tester does the baseline check, it's far more  
11 likely that the energy savings will be realized.

12 But if, for instance, a C-10 contractor does the  
13 same thing, there is no such assurance. Is that what  
14 you're saying?

15 MR. KOTLIER: Yes, and I'll tell you why. And  
16 I'll tell you why. And it's not just the contractor.  
17 You know, Gene has pointed out a number of occasions  
18 that the contractor is sort of held to a standard  
19 because if they don't save the energy, the owner of the  
20 building is going to be upset with them that they didn't  
21 get the energy savings.

22 That may be true, but there's something that  
23 comes before that. And that is when the contractor sits  
24 down with the building owner, and the building owner  
25 says how much is this going to cost me?

1           Sorry. And the building owner says how much is  
2 this going to cost me? And the contractor points out  
3 the provisions of the code. If we can save 35 percent  
4 in this category or 50 percent in this category, you can  
5 avoid the cost of lighting controls, which are much more  
6 expensive.

7           Okay, right there is the crux of this issue.  
8 It's not about later how much energy was saved and, you  
9 know, is the contractor going to misrepresent. It's  
10 about the contractor and the building owner, at the time  
11 of that decision, deciding if they want to save money.

12           And that is the conflict of economic interest  
13 that is behind all of this need for verification.  
14 Because we know that building owners and contractors,  
15 both, want to get the lowest cost job. That's the  
16 market pressure that's on everyone. And that is what is  
17 going to cause people to misrepresent or miscalculate  
18 whether they need controls, and take the option of the  
19 35 or 50 percent.

20           Now, if we're taking that option, we're banking  
21 all of our energy savings for this next three years, and  
22 the life of those components for 10 or 15 years on the  
23 fact that they got 35 to 50. And you can't do that  
24 calculation accurately without confirming that baseline.

25           So, actually, the owners, not only the

1 contractors, but the owners should be required to sign  
2 that statement under penalty of perjury, and we need  
3 eyes on the job. Because the owners are involved with  
4 this decision with the contractor. They're the ones who  
5 are spending the money.

6 MR. SHIRAKH: So for -- can I ask a follow-up  
7 question? So again, I understand everything that you're  
8 saying. But where I'm struggling is the assumption that  
9 when the baseline check is done by a certified  
10 acceptance tester it results in a more accurate count.  
11 But if a C-10 is doing, it may not. Why is that? Why  
12 is that --

13 MR. KOTLIER: It's not just the count.

14 MR. ENSLOW: Can I address that?

15 MR. KOTLIER: Yeah, go ahead, Tom.

16 MR. SHIRAKH: Well, we're establishing the  
17 baseline.

18 MR. ENSLOW: The reason for that is that the  
19 acceptance tester is under the quality assurance program  
20 of the acceptance test certification provider. Meaning  
21 that for a CALCTP certification, for example, that they  
22 go out and field check four percent of the jobs. So  
23 they go out there and they're -- and in this type of  
24 case, probably the type of field check they would do,  
25 they would check to see if they -- you know, how much

1 the low LPD was, you know, and that would be a way for  
2 them to double check that, well, what the acceptance  
3 tester tested makes sense.

4 MR. KOTLIER: But they'll also check the pre and  
5 post.

6 MR. ENSLOW: Yeah, they'll check it. I mean,  
7 they've come up with their quality assurance  
8 requirements.

9 MR. THOMAS: Implementers do the same thing.  
10 Implementers do the same thing on the program end. We  
11 have our own inspections that we do, a hundred percent  
12 of our jobs, and then ten percent on the job spec. So,  
13 we have our management people go out and what our  
14 auditor spec'd on the job, we audit that before  
15 installation.

16 And then the utility client comes back and  
17 inspects another significant percentage of our jobs  
18 afterwards. And then, there's a likelihood that there  
19 will be an EMVT tester.

20 So, it's not like there's no verification that's  
21 done. It's routine.

22 MR. RANDOLPH: How do you guys get paid?

23 MR. THOMAS: We get paid on delivered energy  
24 savings.

25 MR. RANDOLPH: By who?

1           MR. THOMAS: By the utility. From public money.  
2 So if we don't show the savings that we say we're  
3 showing, we get dinged. We don't get paid our  
4 performance. And if we are historically not good at  
5 that, we don't get renewed for that contract or we don't  
6 get the next, brand-new contract. So, it's like multi,  
7 multi, multi millions of dollars for us.

8           MR. KOTLIER: Gene, I'm sure your company does  
9 fantastic work. You got a great reputation. But this  
10 not just about your company. It's about every  
11 contractor in the State and the accuracy of every  
12 baseline, every contractor, and every owner in the  
13 State. So, I know you keep coming back to your  
14 experience because that's your experience. But that's  
15 not the whole state.

16           MR. THOMAS: Right. We don't think that --

17           MR. KOTLIER: And I don't think we can pass -- I  
18 don't think we can make enforcement regulations based on  
19 a narrow or even -- even if you did half of the work in  
20 the State, what about the other half, you know?

21           MR. THOMAS: Just I guess I keep coming back to  
22 the fact that imposing that requirement for acceptance  
23 testing on the front end, to establish a baseline, is  
24 out of the scope for the 2016 standards.

25           MR. KOTLIER: Well, and that's a legal question,

1 frankly.

2 MR. TAYLOR: Yeah, I'd like to table that legal  
3 question because I think it's productive to the  
4 discussion to figure out solutions to this situation.

5 MR. KOTLIER: I can tell you, as well as, you  
6 know, we've heard from Bret and from Tom, that there  
7 were a lot of meetings about this code, and there were a  
8 lot of discussions. And every time we got to  
9 enforcement, we were told that that was going to be  
10 addressed, and it was going to be addressed effectively.

11 And then to hear that the enforcement that's  
12 really needed is out of scope, to me is really  
13 misleading.

14 MR. THOMAS: If that's what's really needed. We  
15 fundamentally disagree that that's --

16 MR. KOTLIER: You have acceptance testers on  
17 your own staff.

18 MR. THOMAS: I know. But I wouldn't want to  
19 impose that on the whole market because that's going to  
20 kill a lot of jobs, and then there goes the savings that  
21 you're hoping for.

22 MR. KOTLIER: Well, I would just like to ask  
23 every building official and every building inspector in  
24 the State, and a lot of them have already -- a number of  
25 them have already testified, if they would give up their

1 on-site inspections and take a signature and a  
2 photograph for what they do. Is there any building  
3 department that would do that?:

4 MS. CUNNINGHAM: That's not on the table.

5 MR. THOMAS: Yeah, that's not --

6 MR. KOTLIER: But that's the same principle.  
7 That's exactly the same principle. Because the  
8 principle is can you trust owners of property, and  
9 contractors who are doing the job, who have an economic  
10 interest, a conflict of interest, can you trust them to  
11 tell the truth? Let's be straight here, that's the real  
12 question.

13 MR. TAYLOR: So, I think the question you're  
14 posing there is more relevant to health and safety.  
15 We're talking about energy here. And there are three  
16 levels of compliance with this type of a code.

17 The first, which we've already done, that's not  
18 at issue here, is our analysis that shows this is cost  
19 effective.

20 So, ideally, a property owner would only go  
21 forward with a project that saves enough energy to make  
22 the investment in the project worth their while. And if  
23 they're being misled by their contractor, that's a  
24 little bit outside the scope. Certainly the intent of  
25 what we're trying to do here, but it's a little bit

1 outside of the scope of this --

2 MR. STRAIT: Well, exactly what we're saying.

3 There are mechanisms in place that would address a

4 situation like that. There's some accountability

5 inherent in somebody tried to do something like that.

6 MR. TAYLOR: So that's the first level. The

7 second level is really what we're focused on here today,

8 is how do we prove compliance when the project's done?

9 How do we document that the project was done correctly

10 to the best and most cost effective level possible. We

11 will never get anywhere near 100 percent of compliance.

12 But let's get as close as we can within the cost

13 constraints that we have compared to what we're saving.

14 MR. RANDOLPH: The difficult that I see, this is

15 Scott, is that we're saying that we're going to allow

16 you to bypass certain aspects of the requirements if you

17 achieve a theoretical number, not --

18 MR. STRAIT: Well, let me clarify that. What

19 you're bypassing is specifically this requirement for

20 bi-level lighting. That's the only difference between

21 reaching this 35 to 50 power reduction or having a

22 lighting power allowance in this 85 percent.

23 Those are already not required under the 2013

24 Code, if you reach that level of lighting power

25 allowance level, which is why we established the 35 to

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1 50 percent as being equivalent to that level.

2           So the only difference, and that's why I've got  
3 this chart on the screen is just to remind folks, the  
4 only difference is in that column that says you've got  
5 bi-level lighting. I'm sorry, this right here, this bi-  
6 level lighting is the only difference between these two  
7 scenarios.

8           So right now, if you have lighting power  
9 allowances under -- if it's 85 percent or less of your  
10 allowance, you already don't have to do daylighting, you  
11 already don't have to do demand response.

12           And for multi-level you already only have to  
13 install bi-level controls.

14           And what we've found is that the presence or  
15 absence of bi-level controls, common to many buildings,  
16 not universal, but they don't save a very large amount  
17 of energy.

18           So, when we're saying that this 35 and 50  
19 percent, getting this required for that requirement, and  
20 that's the only difference between those two projects.  
21 And that 35 to 50 percent greatly overshoots the energy  
22 savings in anything but the absolutely worst case  
23 scenario buildings.

24           So, for the majority of buildings that already  
25 have bi-level controls installed, and we've been having

1 t hose for nearly two decades now, this option will  
2 actually be saving more energy than getting an 85  
3 percent of your power allowance.

4 Which means that even if someone doesn't quite  
5 add the math up exactly right, the fact that they're  
6 installing LEDs or some form of efficient light is still  
7 likely going to get into this ball park.

8 So, that's where we've got to balance those  
9 equities of what is the likelihood of additional energy  
10 savings? What is the anticipate cost and, you know,  
11 modified by that likelihood. And try to calculate at  
12 what point do we hit this threshold of even \$400 that  
13 would say now we can impose a requirement to having such  
14 and such show up, because now we're requiring someone to  
15 foot that extra cost. So, we have a very thin margin  
16 that we're working with here.

17 That's part of why -- again, part of why this  
18 wasn't -- acceptance testing is not included in this  
19 because that margin amount to justify that couple of  
20 hundred dollars of additional cost we didn't see as  
21 being there. But that's because we're trying to make  
22 these options equivalent to one another.

23 What we were asked was can we create an  
24 equivalent pathway to one of the existing pathways that  
25 reduces some of the burdens, and we attempted to do

1 that.

2           So, that's the context, just to clarify. We're  
3 not talking about the difference between this first  
4 problem. If somebody's got a scope, a project that's in  
5 that scale of a project all those requirements exist.  
6 But we're talking about the difference between those  
7 two, in the middle column and the left column.

8           MR. ENSLOW: And Peter, you know, we know that.  
9 But, you know, the concern -- our view has always been  
10 that this new pathway has actually created a new  
11 problem, and that has been the baseline problem.

12           And so, you know, everyone we talk to is like --  
13 you know, based upon -- they're like, they're just going  
14 to tell you what you had before is enough to get you  
15 down. They're not going to tell you what they really  
16 have if it doesn't get it. If it doesn't, you know,  
17 meet that percentage. Because the only way they're  
18 going to get the job is if they beat someone else on the  
19 numbers.

20           And our clients, you know, and I represent both  
21 electricians, and sheet metal, and plumbers. And what  
22 they see every day is, you know, they're bidding against  
23 people whose, their bids, you know, they can't possibly  
24 be complying with the code. You know, just looking at  
25 the materials cost. And it's an everyday occurrence

1 that people are cutting corners on code requirements.

2 And so, I think we have a very different idea  
3 about the extent of lost energy that's going to happen  
4 if there's not, you know, good baseline verification.  
5 And that's probably, fundamentally, you know, where  
6 we're coming from.

7 MR. STRAIT: Just to check what this noise is,  
8 can everyone turn off their microphone?

9 All right, so then the next person to speak go  
10 ahead and turn theirs on. And when that comes back on,  
11 we'll check everybody's microphones. Sorry about that.

12 Tom, did you have something to say?

13 MR. TAYLOR: Tom, we kind of interrupted you.  
14 Did you want to finish your thought? I'm sorry, we had  
15 a technical problem there.

16 MR. ENSLOW: No, that's fine. I think I said  
17 what I wanted to say.

18 MR. TAYLOR: Okay, good. Just to finish my  
19 thought earlier, so the first level is the cost  
20 effective analysis that we -- the first level of  
21 assurance of compliance with this regulation is the cost  
22 effective analysis we did.

23 The second level is this compliance  
24 documentation.

25 The third level is enforcement. And the

1 utilities are stepping up their enforcement for projects  
2 they are looking at. And we are stepping up our  
3 enforcement. We have had a significant increase in our  
4 enforcement authority over the past few years.

5 We are anticipating that through the  
6 documentation that we're getting here, through the  
7 supervision of local authorities, we'll be able to step  
8 up the enforcement even further and look at, and  
9 hopefully identify some of those bad actors.

10 But there are three levels to this and I just  
11 want to come back to the cost effectiveness. That's  
12 what we're here to try to figure out today is how much  
13 energy can we save by imposing additional levels of  
14 documentation on that middle step, and is it cost  
15 effective.

16 MR. STRAIT: Or, rather, in order for us to  
17 start imposing those can we document cost effectiveness  
18 so that we are empowered, thereby, to do so.

19 MR. TAYLOR: Yes.

20 MR. ENSLOW: And, you know, I think our response  
21 goes back to the limited studies that are out there show  
22 significant cost losses without there being, you know,  
23 verification.

24 MR. STRAIT: All right. Is there anything else  
25 that people would like bring on the table or discuss at

1 this meeting? We are currently at 1:17, again. I  
2 think, do you know if he just stepped out to the rest  
3 room?

4 MR. ENSLOW: Yeah, I'm not sure.

5 MR. TAYLOR: So, Bernie just stepped out of the  
6 room, briefly, but -- oh, he's coming back.

7 MR. THOMAS: Could you confirm that comment  
8 deadline? I heard two different numbers. I've heard  
9 February 21st at 5:00 p.m. and then I heard the 19th.

10 MR. STRAIT: Let me go to the notes on our  
11 website.

12 MR. THOMAS: The 21st, all right.

13 MR. SHIRAKH: I have a question from Gene.

14 MR. THOMAS: The 23rd, okay.

15 MR. STRAIT: I'm going to open this up and put  
16 it on the screen so we have that date.

17 MR. THOMAS: Got it.

18 MS. CUNNINGHAM: So, since, Gabe, you already  
19 mentioned the cost effectiveness studies that were done  
20 to put the measures into place in the first place.

21 MR. TAYLOR: Uh-hum.

22 MS. CUNNINGHAM: So, you already have the  
23 numbers by which to compare any other --

24 MR. STRAIT: Sorry, it's the 19th.

25 MS. CUNNINGHAM: Oh, it's the 19th?

1           MR. STRAIT: It's they have to be in on Tuesday,  
2 February 19th, at 4:00 p.m. is what has been published.

3           MR. THOMAS: All right.

4           MS. CUNNINGHAM: So whatever you come up with  
5 for a process for enforcing this section has to be more  
6 cost effective than what you've determined in terms of  
7 this measure, right, so --

8           MR. STRAIT: So right now, for cost  
9 effectiveness, if we go with the measure that's  
10 identical with what we have for other lighting  
11 requirements, as you fill out a form that's related to  
12 that, that would be equivalent and we can do that  
13 without having the additional verification.

14           Other measures can --

15           MR. TAYLOR: I'm looking at a calendar here and  
16 February 19th is a Friday, is that correct?

17           MR. STRAIT: Let's see, Friday, February 19th.  
18 Okay, so that word might have been wrong. Or it might  
19 have been -- that's what I was keying in on is that  
20 Tuesday is the 23rd, so I think I read the Tuesday  
21 before and then I'll figure out what that -- honestly,  
22 when there are errors like this, typically we just go  
23 with whatever that later date is. I would still  
24 encourage people to get it in by the 19th, but if we  
25 find that there is an error then that --

1           MR. TAYLOR: So do we -- can we make an official  
2 call on that just for the record. Will we accept  
3 comments by the following Tuesday or do we want to hold  
4 to the 19th?

5           MR. STRAIT: I don't feel that I would be able  
6 to -- I don't feel that I have the power to make an  
7 official call. I will say that we are likely to extend  
8 the comment period to the 23rd to take into account this  
9 error. But I would not, in that sense, discourage  
10 people from submitting comments early.

11           MR. TAYLOR: Please get your comments in by  
12 Friday night, thank you.

13           MR. KOTLIER: This Friday?

14           MR. TAYLOR: The 19th.

15           MR. KOTLIER: Oh, the 19th.

16           MR. TAYLOR: There appears to be a typo in our  
17 notice, so kindly get your comments in by Friday night,  
18 if you can.

19           Bernie, thanks for coming back. I did have one  
20 question. Bernie brought up the concept of the  
21 owner/operator of the building. This, in theory, is  
22 somebody who does not have a split incentive here. They  
23 do have an interest in saving the energy, they're paying  
24 for the project. And if there's not as much savings on  
25 this project as they anticipated, then in theory they're

1 losing money on the project.

2           Would that increase the compliance rate for the  
3 project to have some sort of attestation or  
4 certification from the owner of the building, the owner  
5 of the equipment that the original equipment cited on  
6 the documentation to the building department is  
7 accurate?

8           MR. ENSLOW: If I could respond to that, this is  
9 Tom Enslow. I think to an extent, potentially. I mean  
10 I think it's always good to have the owner in the game.  
11 And to be aware -- he's not actually going to be aware  
12 if he's not good in this.

13           On the other hand, if the owner knows he's still  
14 going to be saving more than what it costs, and he  
15 doesn't have to do as much up front cost, it wouldn't  
16 necessarily dissuade him.

17           But I do think that it's another extra step that  
18 would incrementally increase, you know, compliance.

19           MR. THOMAS: This is Gene. I'd have to have  
20 some consultation with our team on that because we've  
21 been pretty effective at getting past the split-  
22 incentive barrier. About 60 percent of our jobs are in  
23 leased space. And many of those times it's the lessee  
24 that makes the decision to move ahead on a lighting  
25 project. I'm not talking about a big, multi-measure

1 project, I'm talking about a lighting retrofit.

2 So, they're very often able to give the go-ahead  
3 on that. And if you were to impose then having to bring  
4 in the actual building owner, that may be a complication  
5 that could be burdensome and could possibly go the other  
6 way. We'd have to give that some thought and research.

7 MR. SHIRAKH: I have a question for Bernie. I  
8 heard you, I think you mentioned using a non-acceptance  
9 tester, like a C-10 may represent a conflict of  
10 interest. Did I hear that correctly?

11 MR. KOTLIER: No, what I said is the conflict of  
12 interest is when the owner and the contractor are trying  
13 to save money. They have a conflict of interest in  
14 complying with the regulation. Because the regulation  
15 says that you can avoid doing more extensive work if you  
16 can save 35 or 50 percent, right.

17 So, they're motivation is to save money.  
18 Therefore, their motivation is to participate in the 35  
19 or 50 percent options, and that is all dependent on what  
20 the baseline is. So, verification of the baseline is  
21 critical. And it's critical to a big chunk of savings  
22 which I think is far greater than what it's going to  
23 cost and have somebody come in and look.

24 And once again, we're not talking about  
25 acceptance testers doing the full test that they do at

1 the end. We're just having them come in and, as Scott  
2 said, I mean he's an inspector, maybe it will take them,  
3 I don't know, a half hour, or 45 minutes, or 20 minutes  
4 depending on the size of the job. We're talking about  
5 relatively short.

6 And I also, you know, I disagree with the idea  
7 that these people are over qualified. Because once  
8 again, we're not talking about just counting lamps.  
9 We're talking about a lot of different lighting systems  
10 that have different ballasts, different lamps, and we're  
11 talking about a calculation compared to the new system.  
12 And that's not so simple.

13 I mean, I had a lighting engineer spend 15 or 20  
14 minutes explaining all the things you have to do to make  
15 sure that that's right. You have to look them all up,  
16 you have to get the specs. The specs are not always on  
17 the equipment. A lot of times they have to be  
18 researched. And you have to make sure about the  
19 interaction of the ballast and the lamps, and all. Like  
20 I said, I'm not the engineer. But the engineers tell me  
21 that's not such a simple thing and it's not just  
22 counting lamps.

23 MR. SHIRAKH: I think that I understand the  
24 issue pretty well and it's just a matter for us to have  
25 a chance to -- and you have both C-10s and acceptance

1 testers on your staff, Gene?

2 MR. THOMAS: That's correct. But I mean it's a

3 --

4 MR. SHIRAKH: What are the rates they charge?

5 Are they drastically different or is that --

6 MR. LEE: I think the key question is what's the  
7 minimum cost for them showing up on a job site, like the  
8 absolute minimum?

9 MR. THOMAS: It depends on the scope of what  
10 they're doing. I mean, we have our lighting specialists  
11 go out and find the jobs, and do the initial spec of  
12 what's going to be installed. We hand that job to one  
13 of our program contractors, that's predominantly where  
14 our installs come from, that have agreed to meet the  
15 bona fides of the program and do what's required of  
16 them.

17 They go out and verify the spec. They walk the  
18 job and they make sure we didn't miss anything. And  
19 they say, yes, I want to take this job on or, no, I  
20 don't want to take this job on.

21 So, once they say, yes, I want to, they're  
22 agreeing to go ahead and install what was specified,  
23 drawing from the equipment list and so forth.

24 If, during the course of that installation they  
25 find something -- because when we're doing the spec, we

1 don't look into every single trougher that's in the  
2 ceiling. We look in enough to verify that this is  
3 what's there. If a number of things are different, that  
4 the contractor finds when he's actually up in the  
5 ceiling, then there's a change order that happens.

6           And then, when it's a job that's triggering  
7 code, the contractors that's on that, that is the  
8 responsible person that signs that -- the installation  
9 that I'm talking about, the LTO-1 compliance form. And  
10 if actual acceptance testing is needed for specific  
11 controls, then if he's the one that's doing it, then  
12 he'll have that capability, generally.

13           He'll sign off on that. If he's at another  
14 place and can't get back at the appointed time, then  
15 we'll have somebody else do that. So, the acceptance  
16 testing that's required is still going to get done.

17           But we just think it is -- and I point again at  
18 that spread sheet. It's not very technical, regardless  
19 of what an engineer may or may not have said. It's not  
20 very technical to look at see what's there. We know  
21 what the wattages are. That's all in our software and  
22 everything that we do for tracking.

23           Other implementers, like us, have similar  
24 software systems that are picking from standard wattages  
25 for that type of lamp and ballast from that

1 manufacturer, of what's acceptable. And it's really  
2 very cut and dry.

3           So, could you get some incremental less risk by  
4 bringing in a certified acceptance tester for that front  
5 end work? Some marginal one, but we do not think  
6 it's -- we think it's overkill because it's not  
7 necessary for the work, the documentation work that's  
8 being done.

9           And I hear all the comments that have been made  
10 about pictures are no good. And maybe they're no good  
11 for a jurisdiction, but they're okay for the utilities  
12 and they're okay for the CPUC to validate the energy  
13 savings claims. And they're going to be looking for  
14 cheating. And the incentive is on the contractor to not  
15 cheat. Otherwise, he gets call backs. And what do  
16 contractors hate more than anything else, call backs,  
17 having to go back to a customer.

18           And that's what program implementers hate,  
19 having to pacify a ticked off customer. That's what  
20 utilities hate, having to chastise their implementers  
21 and having their savings jeopardized.

22           So, when you're talking about just establishing  
23 what's there and recording that in a way that's easy for  
24 a jurisdiction to see and follow, and see if that seems  
25 reasonable or not, we think that a certified contractor,

1 a C-10 electrician, the people that are actually doing  
2 the installs are -- that's well within their capability  
3 and expertise. And the incentive is for truth and  
4 accuracy more than it is for the latter, the opposite of  
5 that.

6 MR. SHIRAKH: Maybe it's a point that your  
7 contractor is doing an exception on the job. But not  
8 every company has your standards. And also, not all  
9 projects go through the utilities. What about those  
10 places?

11 MR. THOMAS: It's still -- it's still behooves  
12 the contractor to give accurate information in  
13 specifying a project so that the customer will get the  
14 energy savings that it shows they're going to get. And  
15 there's -- we can't imagine a system that would  
16 absolutely prevent any collusion or whatever of some way  
17 to get around the code, or whatever by staging, or by --  
18 people are always going to be able to cheat. There's no  
19 system that can get around that.

20 But if it's that easy and inexpensive to put  
21 feet on the ground and eyes on the ceiling, but the  
22 jurisdictions can't do it because it's too expensive for  
23 them, why is it reasonable for them to expect that it's  
24 not going to be too expensive for the customer?

25 Because the customer votes with his wallet. If

1 he's -- if he has to have a year and a half payback or  
2 it doesn't meet his ROI, and that extra several hundred  
3 dollars moves it past that, then that's a job where not  
4 only do you not get the incremental savings from the  
5 controls, you don't get any savings whatsoever.

6           And so, it's been established that this third  
7 path in the 2016 Code saves as much or more energy than  
8 the 2013 Code. We believe that imposing a requirement  
9 for a lighting acceptance technician to do a front end  
10 baseline assessment, and check all the calculations and  
11 so forth on the front end is unreasonable, and  
12 burdensome, and is not account for in the cost  
13 effectiveness study for the 2016 standards. And that  
14 would be something that would be on the table for the  
15 2019.

16           MR. TAYLOR: So, I think we've established that  
17 disagreement between the various sides.

18           There's a couple of points I'd like to clarify  
19 for our analysis. Can we agree that there are some  
20 cases that are not really a concern, some specific  
21 projects that are not of a concern. It's more of the  
22 fringe cases that we're looking at.

23           Specifically, I mean if we have a project where  
24 they have old T-12s and they're installing pretty new,  
25 solid state lighting, it's pretty obvious that they're

1 going to have an enormous, you know, 70 plus percent  
2 savings. Is that -- are we concerned about those  
3 projects?

4 MR. ENSLOW: We're not concerned about the  
5 savings. We're concerned about the baseline that  
6 they're actually, you know, the old T-12s.

7 MR. THOMAS: But that is what the standard --

8 MR. TAYLOR: So, in that situation, say they  
9 submit an application to a building department where  
10 they say they there were T-12s there, and we're  
11 installing these solid state -- you know, pretty late  
12 solid state, 80 plus, whatever, some amazing rate of  
13 return -- or savings. That's a bit of a red flag.

14 But what I would consider to be a fringe case  
15 that's a little bit more of a concern is where they say  
16 that the original lighting was incredibly inefficient  
17 and they're putting in something that is not really the  
18 latest. It's something that's not particularly  
19 efficient, necessarily, something sub-40 lumens per  
20 watt, and they're claiming that they're getting these  
21 savings.

22 Would that be something that would raise a red  
23 flag to the building departments that perhaps they could  
24 take additional action on? Because this is a fringe  
25 case that's not common.

1           MR. WIRICK: This is Wayne. You know, I think  
2 it has -- I think, you know, we have an opportunity to  
3 take a look at the documentation and thoroughly  
4 scrutinize if it doesn't look right.

5           MR. KOTLIER: I would just like to respond to a  
6 few things here. Gene, I know you've said this three or  
7 four times, but I'm going to have to be a broken record  
8 and respond to it three or four times.

9           Gene has said over and over that the contractor  
10 is motivated to do the right thing and do a good job,  
11 and get the savings because the owner will be unhappy if  
12 he doesn't. And that is true, Gene. But you're leaving  
13 one important thing out, that that happens after the  
14 contractor and the owner have decided whether or not  
15 they can skirt the more expensive work by participating  
16 in the 35 to 50 percent.

17           We're not talking about what happens after,  
18 that's irrelevant. And this has been going on, and on,  
19 and on. You know, I have a lot of respect for Gene. He  
20 is the loyal opposition. He's a very well -- he's very  
21 well experienced, he knows what he's doing.

22           But you guys have been listening to him for the  
23 past ten months and it's all of the data, and all of the  
24 interpretations, and all of the views that he has  
25 brought to this Commission that has given us this option

1 for the 35 and 50.

2           And we represent 1,200 contractors. We  
3 represent over 30,000 electricians. And we do a  
4 tremendous amount of lighting work and we respectfully  
5 disagree with this information. It is not -- there is  
6 no self-correcting relationship between a contractor and  
7 a customer that is at question here in enforcement.  
8 That's after.

9           MR. TAYLOR: So, can I maybe establish a point  
10 between the two parties here, that is hopefully in  
11 agreement. There are actors, contractors and building  
12 owners that will try to circumvent. Is that something  
13 that we can establish and --

14           MR. THOMAS: Absolutely. Yeah, there certainly  
15 are and there are ones who just do everything under the  
16 table. And that's not just limited to lighting. They  
17 try do with --

18           MR. TAYLOR: Okay, so let's -- so perhaps as we  
19 look at methods to document enforcement, to document  
20 compliance and, hopefully, at some point enforce these  
21 regulations, we can focus on those actors that are  
22 potentially going to circumvent.

23           So, how do we address them? So, these are --  
24 and I've certainly said that, you know, the building  
25 owners, it's in their best interest to ensure that the

1 energy savings is there so that they save the money.

2 Let's table that and we can agree that we're not  
3 talking about them. We're not talking about that  
4 building owner who's paying attention, who's getting a  
5 good product.

6 We're talking about the building owner who's not  
7 paying attention, we're talking about the contractor  
8 who's maybe using this as a tool to convince the  
9 building owner to do something that's against their best  
10 interest. So let's talk about --

11 MR. KOTLIER: But when the building owner is  
12 putting pressure on the contractor to get the lower  
13 price, and how do I do that? It goes both ways.

14 MR. TAYLOR: So, let's talk about --

15 MR. STRAIT: But you could even put in the frame  
16 of -- to be neutral, let's put it in the sense of a fair  
17 contractor is bidding on a contract. It's a low-bid  
18 project. Therefore, they have a motivation independent  
19 from anything else other than the lowest price. That  
20 way, they're not making any assumptions about what  
21 they're -- how pure their motives are. Because there is  
22 a price factor that has to be -- there's certainly a  
23 price motivation that has to --

24 MR. KOTLIER: But that's true, a lot of bids are  
25 --

1           MR. STRAIT: Nothing about -- for this  
2 discussion, this example right now, let's look at it  
3 that way so we're maybe not --

4           MR. KOTLIER: But it's not just about bids  
5 because a lot of these jobs are just sold one to one.

6           MR. STRAIT: Sure.

7           MR. KOTLIER: They're not all bid out.

8           MR. TAYLOR: So, I've heard a process where we  
9 have a form and we have the contractor attest to the  
10 baseline conditions.

11           I've heard a proposal where we have a third  
12 party, a certified third party come out to the site  
13 before anything's done and they attest to the baseline  
14 conditions.

15           There's potentially a cost difference between  
16 those two approaches.

17           Are there any other approaches that we could  
18 potentially --

19           MR. KOTLIER: Well, just to be clear, the  
20 approach that I subscribe to is that both the owner and  
21 the contractor have to sign, and there's eyes on the  
22 job. That's the position of IBEW and NECA, that both of  
23 them have to sign. They're both responsible under  
24 penalty of perjury and you have somebody look at the  
25 job.

1           And I'm not talking about small jobs. I mean,  
2 you made the point of, well, maybe it's just -- you  
3 know, maybe we don't have to look at all of them. We  
4 don't, we don't have to look at the very small jobs.  
5 There's already exceptions for small jobs.

6           But we do have to look at the medium and large  
7 jobs because that's where all the energy savings are.  
8 And that's where your cost effectiveness comes in.  
9 Because if we just lose five or ten percent of the  
10 energy efficiency in those jobs, and you multiply it by  
11 the life of those systems, and remember this is not one  
12 year or three years, this is the life of these systems,  
13 we're talking about a huge cost.

14           MR. TAYLOR: So, I'd like to direct a question  
15 at the building departments because they're really the  
16 people who are enforcing those, primarily.

17           What type of red flags would be helpful for you  
18 to ensure that there's a higher level of compliance?

19           MR. WIRICK: I'm sorry, can you repeat the  
20 question? I couldn't quite hear it.

21           MR. TAYLOR: So, what type of documentation  
22 would provide you with something that you could check to  
23 look for a red flag, to ensure a higher level -- to  
24 differentiate between those projects that are installing  
25 the most efficient, 130-plus-lumen-per-watt, solid state

1 lighting, and those projects that are potentially  
2 installing a much less efficient product, and  
3 potentially trying to circumvent the process?

4 MR. WIRICK: I'm not sure I want to go there. I  
5 think we want the documentation, so there needs to be  
6 done to document the baseline. But I don't -- you know,  
7 when you start to determine -- what we're talking here  
8 is level of scrutiny, no matter where we place it. And  
9 at this point I think the -- they have to have the  
10 baseline information that's needed is what we're looking  
11 at.

12 I don't think that it makes a lot of sense  
13 trying to say, well, if it reaches this level we have to  
14 go here, and if we, you know, go to this level -- you  
15 know, at this level we have to have some further  
16 scrutiny. I think the building department always has  
17 that capability to go back and look. A building  
18 department's going to handle that differently in any  
19 case.

20 MR. STRAIT: I'm actually going to step in here.  
21 We're nearing the two o'clock hour. I think we are --  
22 we are starting to talk about the same ideas multiple  
23 times, so we've probably put everything on the table  
24 that gives us enough to chew on. More detail and more  
25 information will be added to the written process, but

1 I'm recognizing here that --

2 MR. KOTLIER: Well, I think --

3 MR. STRAIT: Okay, but in terms of cost of  
4 efficiency, we've got a lot of people in this room and a  
5 lot of money involved. But let's just aim for two  
6 o'clock. I'm not saying we'll break now, I'm saying for  
7 two o'clock is great.

8 MR. RANDOLPH: Within the context of a large  
9 group, and Sonoma is a small organization, and we do  
10 more plans a week in this context, in the City of San  
11 Jose.

12 The difficulty, it's even convincing the AHJ  
13 that whoever signs the documentation is qualified.  
14 Unfortunately, the vast -- many contractors are not  
15 qualified to draw up and electrical plan. And when we  
16 look at that, that's just the basic NAC requirements.  
17 Now, we're talking about something that's much more  
18 vague, much more an ethereal cloud, whatever you want to  
19 call it, of lighting controls and things like that, who  
20 are we going to get to do it?

21 The AHJs have already been established. They've  
22 already established that they are willing to accept the  
23 acceptance tester's documentation. And the fact that  
24 they sign off on that document, they're willing to  
25 accept that as the basis of we will proceed, allow this

1 project to proceed. We will give this project our  
2 blessing.

3 MR. TAYLOR: But that's after the fact.

4 MR. RANDOLPH: Right, after the fact.

5 MR. TAYLOR: So, we're talking about the  
6 baseline, now.

7 MR. RANDOLPH: So, if when we go before the  
8 fact, the challenge will be to find someone that the  
9 AHJs will still accept as being qualified to look at  
10 what's existing and to do these baseline documents, and  
11 verify this baseline procedure.

12 You have acceptance testers. They're already  
13 established. There's a couple thousand of them in  
14 California. Admittedly they -- we'll say they're over-  
15 qualified. But there isn't anybody else out there. As  
16 a plan checker, I don't trust the contractor. I work  
17 for a contractor. I verify what my contractor does.  
18 That's my job, that's what they pay me for.

19 Other contractors of all sizes, small, medium  
20 and large, and they don't do it always willingly, or  
21 willfully would be a better word. Sometimes it's just  
22 an error. They just made a mistake.

23 If we want to keep this process, you have to  
24 find someone who the AHJs are already comfortable with  
25 looking at this documentation. Sure, let's do another

1 program. That's training, another training program,  
2 let's CALCTP involved, let's do all this. Let's train  
3 2,000 more goes to go out and look at --

4 MR. TAYLOR: You're being facetious.

5 MR. RANDOLPH: I am being totally facetious.  
6 I'm being completely facetious. We already have these  
7 people in house. A couple of hundred bucks, it's going  
8 to cost way more, as Gene says, \$3,500 dollars to train  
9 an acceptance tester.

10 We're not talking about \$3,500. We're talking  
11 about a few hundred dollars. The offset cost,  
12 personally, I would like to see expensive enough that  
13 the person goes, you know what, I think we should do the  
14 AB switching at the very minimum because what we're  
15 after is to achieve a specific goal. We're already  
16 going to say, well, if you can do this, and we can do  
17 this, you can eliminate some of the controls that are  
18 required to provide you with the most energy savings  
19 possible. And we're doing it on a dollar basis. And I  
20 understand the dollar for savings, and I understand that  
21 concept, and we can talk about that, the 30-year payback  
22 and things like that.

23 But you have someone in place that's already  
24 there, that's called an acceptance tester. So, they run  
25 in for half-hour, they look at the job, they verify,

1 they fill out the paperwork, whatever the Energy  
2 Commission does and we go on from there. The AHJs  
3 already accept the acceptance tester's signature as  
4 validation of what they're looking at.

5 MR. STRAIT: So, one quick logistical question.  
6 Are acceptance testers available in every county in the  
7 State?

8 MR. ENSLOW: Yes, actually, I also represent  
9 CALCTP and they do have representatives in every state  
10 and they also --

11 MR. RANDOLPH: Every county.

12 MR. ENSLOW: Every county, I mean. Every state,  
13 I mean every county. And that, in fact, was part of the  
14 requirement for it to become mandatory.

15 And they also have a process where if you need a  
16 third party, you know, your contractor doesn't have  
17 someone certified, they can call CALCTP or ask CALCTP  
18 for a bid and they'll find someone for you. So, it's  
19 not -- you know, there's a process to get help through  
20 CALCTP if you're having trouble finding a third party.

21 MR. STRAIT: Does that process cost any extra?

22 MR. ENSLOW: No, cost.

23 MR. STRAIT: I'm just asking that because --

24 MR. THOMAS: Well, I'd just point out we've  
25 already heard comments to the effect that it's hard to

1 find an acceptance tester in some areas, unless that  
2 acceptance tester is the one that's going to do the  
3 work. They don't want to take on the -- take on that AT  
4 job. And if that's the case for more detailed work, how  
5 much more likely it is that they won't want to take a  
6 job for half an hour, for 200 bucks, to drive 40 miles  
7 each way to do this. It's just unreasonable to expect  
8 that, oh, yeah, a couple of hundred bucks. They'll be  
9 willing to find them, whenever you need them, to go out  
10 and do this. And if they can do it in half an hour,  
11 then why can't the C-10 electrician or the contractor  
12 that's doing the work do that?

13           They're already going to be going through  
14 everything. They're not just going to be going through  
15 one, or two, or three, or ten percent of the fixtures.  
16 They're going to be going through all of them. They're  
17 going to be recording them in detail.

18           MR. RANDOLPH: I'll go back to Bernie's  
19 statement.

20           MR. ENSLOW: I'd like to respond to that, that  
21 comment about them already not being able to find CALCTP  
22 acceptance testers. And CALCTP has heard that complaint  
23 from one specific jurisdiction and has not been able to  
24 verify that. But what they have done is they have, you  
25 know, updated the website to make it more clear how you

1 can get help finding a third-party acceptance tester if  
2 you cannot -- they have not had any problems,  
3 themselves. Internal, any documented problems,  
4 themselves, having difficulty finding an acceptance  
5 tester for someone who has requested it.

6 MR. KOTLIER: No, I mean, we've had acceptance  
7 testing now -- we've had acceptance testing, now, since  
8 July of 2014. And all you have to do is look at the  
9 number of complaints or comments and you'll find that  
10 there's been virtually none. I think Tom said there was  
11 one that was turned in and we couldn't even verify it.

12 And I think what Gene is talking about is, yes,  
13 if you go to Mt. Shasta, or you go to the far end of the  
14 desert, yeah, you might have to call somebody to come in  
15 40 miles. But what we're talking about here is the  
16 State of California, where not 80 percent, but 90 or 95  
17 percent of the population lives in medium and large  
18 cities, and they have plenty of access.

19 Sure, you can always find a few people on the  
20 fringes, you know, way, way out in the boondocks, but  
21 that's not the point. The point is that acceptance  
22 testing is being done every day, and we get almost no  
23 complaints, and almost no questions about getting an  
24 acceptance tester.

25 So, I don't think these exceptions should be the

1 rule.

2 MR. THOMAS: There was a lot of comment in the  
3 proceeding leading up to the acceptance of the code on  
4 the costs involved, and the under-estimates for the  
5 costs involved for acceptance testing.

6 So, and I'm not going to try to get into all  
7 that stuff here. But enough said that there's  
8 conflicting information on the cost burden for that.  
9 There's conflicting information on the cost burden for  
10 acceptance testing, by multiple stakeholders. And so,  
11 it may be a little optimistic to just throw out a  
12 couple-hundred-dollar figure and a half-hour's worth of  
13 time estimate for this.

14 And if that's really what it takes, then there's  
15 not that much to it, so why can't the contractor or C-10  
16 do it?

17 MR. KOTLIER: You know, I represent contractors  
18 and I can tell you that not even our contractors believe  
19 that they should be the ones to do inspections. Once  
20 again, why do we have building departments? Why do we  
21 have inspections? If contractors could do this, if  
22 owners and contractors could verify their work, we  
23 wouldn't have building departments and building  
24 inspectors.

25 And, you know, we keep going around the same

1 circle, Gene, but we respectfully, strongly disagree.

2 MR. STRAIT: I think we have both sets of  
3 comments on that topic, on the record.

4 MR. THOMAS: Yeah.

5 MR. STRAIT: We've got about 12 minutes left.  
6 I'm going to have one more poll of the callers that are  
7 still attending remotely. If anyone out there has any  
8 comments they would like to make at this time, and would  
9 like to be unmuted, please simply click the raise your  
10 hand button. And we will address those and make sure  
11 that you are included in this last minutes of the  
12 proceeding.

13 MR. KOTLIER: While that's happening, I'd like  
14 to point out that a lot of the cities who were on this  
15 morning are gone.

16 MR. STRAIT: Yeah.

17 MR. KOTLIER: The County of Los Angeles, the  
18 City of Los Angeles. And I know the City of San  
19 Francisco and the City of San Diego wanted to be  
20 involved today, but they didn't have enough time to  
21 schedule. So, I'm sure they'll be making comments about  
22 this, too.

23 MR. STRAIT: Sure, sure.

24 I'm not seeing any additional comments from the  
25 call-in participants.

1           So, are there any new topic that hasn't been  
2 raised thus far, any new discussion points that people  
3 want to have in the last ten minutes of this proceeding?

4           Any fun jokes or anecdotes to lightening the  
5 mood?

6           MS. CUNNINGHAM: No, I don't have any jokes, but  
7 I do --

8           MR. KOTLIER: Well, we want to go to lunch.

9           MS. CUNNINGHAM: I do hope that we can consider  
10 using new tools. Things that didn't work 20 years ago,  
11 there's big revolutions that have happened in the  
12 meantime. Video, photo, something in the documentation,  
13 and we're not talking about the eyes-on, no-eyes-on  
14 inspector, no inspector whatever. Just in the  
15 documentation and the forms, we have all these new  
16 digital options and we should not rule those out.  
17 That's my last comment. I didn't get to say -- we  
18 didn't even get to say the word "video" today so --

19           MR. RANDOLPH: I did.

20           MS. CUNNINGHAM: Oh, that's right, you did say  
21 it.

22           MR. RANDOLPH: I said video.

23           MS. CUNNINGHAM: And you did say video. And  
24 that could be something that is more accurate.

25           MR. RANDOLPH: Absolutely not. I said it was

1 not even a consideration. That's work for an AHJ.

2 MS. CUNNINGHAM: Well, I just --

3 MR. RANDOLPH: Yeah, I know.

4 MR. KOTLIER: Can we go to lunch?

5 MR. STRAIT: We've got someone that's put  
6 forward a go-to-lunch motion. Does anyone second the  
7 motion?

8 MR. KOTLIER: Oh, yes.

9 MR. ENSLOW: Is that a go to lunch or an  
10 adjournment?

11 MS. CUNNINGHAM: Go to lunch or adjourning? Are  
12 we adjourning?

13 MR. STRAIT: Well, we did promise we were going  
14 to say something about the next steps and follow up.  
15 So, I'm going to hand the mic over to Simon and he'll  
16 give our final bit of the presentation and then we can  
17 formally close.

18 MR. LEE: Okay. So, yeah, next steps. From now  
19 through the beginning of April, staff will read and  
20 consider comments received. We have had a lot of good  
21 comments, a lot of good exchange of opinions, and  
22 positions, and suggestions. Those are all good. So, we  
23 will look into those.

24 And we will get the compliance documentation for  
25 lighting alterations ready for the April 13th Business

1 Meeting. And we hope that these compliance documents  
2 will be for the use.

3 And the meeting is now adjourned and thank you  
4 panelists to those who's coming here. And thank you to  
5 those who are joining us remotely. Have a good one.

6 (Thereupon, the Workshop was adjourned at  
7 1:52 p.m.)

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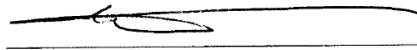
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I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under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

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IN WITNESS WHEREOF, I have hereunto set my hand this 17th day of February, 2016.



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PETER PETTY  
CER\*\*D-493  
Notary Public

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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.

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Barbara Little  
Certified Transcriber  
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