

BEFORE THE  
CALIFORNIA ENERGY COMMISSION

*Docket  
10-BSTD-01*

In the matter of Staff Workshop re )  
Draft Evaluation Report of Compliance )  
Option for Open Cell Spray )  
Polyurethane Foam Insulation )

<b>DOCKET</b>	
10-BSTD-01	
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CALIFORNIA ENERGY COMMISSION  
HEARING ROOM B  
1516 NINTH STREET  
SACRAMENTO, CALIFORNIA

MONDAY, JULY 25, 2011  
9:30 A.M.

Reported by:  
Peter Petty

 ORIGINAL

## APPEARANCES

Staff Present:

Gary Flamm  
Leah Lentz  
David Ware  
Ron Yasny

Presenters/Panelists (\*Via WebEx)

Steve Easley, Steve Easley & Associates, Inc.  
Roger Morrison, Deer Ridge Consulting, Inc.

**Also Present**Public Comment

Mac Sheldon, Demilec (USA) LLC  
Lyle Orth, Cool-Roof Systems  
George Nesbitt, CalHERS  
\*Rick Duncan, SPFA  
Jill Ludvickson, Western Pacific Roofing Corp.  
Gary Talbot, Five Star Performance Insulation  
James Francisco, Sierra Consulting  
Dan Varvais, Bayer Material Science

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

2 JULY 25, 2011

9:56 A.M.

3 [Meeting already in progress]

4 MR. WARE: Okay, thanks, George. Good comments.

5 Anyone else?

6 MR. SHELDON: Mac Sheldon, Demilec USA. We're a  
7 manufacturer of spray polyurethane foams both in the so-  
8 called open cell and the so-called closed cell; actually,  
9 they're medium density for the closed cell and low density  
10 for open cell. There's absolutely no reason to full fill  
11 a 2' X 6' cavity provided you've sprayed enough to meet  
12 the proscriptive thermal resistance for R-Value.

13 Since the material itself is an air barrier  
14 material, which we can demonstrate down to even a one-inch  
15 thickness in ASTM E 2178, it fully satisfies the needs for  
16 thermal resistance and having that additional amount to  
17 fill the cavity, and then to overfill the cavity to be  
18 shaved off so it's so-called "full filled," is very  
19 wasteful and it can be extraordinarily expensive.

20 It can absolutely make the difference between a  
21 person accepting a very well insulated air-sealed home  
22 with so-called open cell foam, the low density foam, and a  
23 person putting in an air permeable insulation that we know  
24 suffers from wind washing and losses due to its physical  
25 property of being air permeable.

1           So, we encourage you to accept the industry  
2 standard, to accept the standard that's in the model code,  
3 the International Codes, and please don't require full  
4 filling of 2' X 6'. A 2' x 4' is understandable because  
5 nowhere in the country is there a requirement for less  
6 than R13.

7           We know that using the 3.6 R-Value that's assigned  
8 to us, that 2' X 4' would consequently need to be full  
9 filled. But 2' X 6' absolutely doesn't if we've satisfied  
10 the thermal resistance requirements.

11           MR. WARE: Thanks, Mac. Anyone else?

12           MR. ORTH: Lyle Orth with Cool-Roof Systems, a  
13 contractor in California. It seems every time we look at  
14 the Codes here, including this one that we're not  
15 recognizing the full benefits of the spray foam  
16 application and what it truly offers in the completed  
17 building assembly.

18           We're not recognizing the fact that we don't add  
19 the convection flow that you have with the other air  
20 permeable insulations on there. We're not recognizing the  
21 fact that foam is effective against radiated types of heat  
22 transfer.

23           As a contractor, I feel that we're being pushed  
24 now to match the low performance of other material  
25 insulation products on there, while not fully recognizing

1 all the performance benefits that spray foam brings to the  
2 construction industry, and brings to the improvement of  
3 the energy efficiency of the homes and buildings in  
4 California. And as such, I have to agree with the SPFA's  
5 position that the 2' X 6' full filled requirement is an  
6 excess requirement on it, it makes us less competitive in  
7 the marketplace, makes it less used or less specified, and  
8 we have many clients right now that are wanting spray  
9 foam, but they've only got an R13 requirement in there, an  
10 R13 with their insulation requirements.

11 So here we've got a situation where you're putting  
12 spray foam at a very distinct economic disadvantage in  
13 comparison to other insulation materials that are  
14 currently on the market. Thank you.

15 MR. WARE: Thanks. George.

16 MR. NESBITT: George NESBITT. One additional  
17 item. Under QII, if we have 2' X 6' and we're using  
18 batts, we would have to fill the cavity, so we would have  
19 to use an R19 or an R21, so as far as a compliance credit,  
20 there would be no discrepancy. From a basic Code  
21 standpoint, there would be if we were requiring QII, it  
22 would be a different story, but as far as a compliance  
23 credit, batts have to fill the cavity, too.

24 MR. DUNCAN: Yes, hello, this is Rick Duncan,  
25 Director for SPFA. Can you hear me?

1 MR. WARE: Yes, we can.

2 MR. DUNCAN: Okay, thank you, Dave. I would like  
3 to comment on the requirement for full cavity fill using  
4 fiberglass batt. The less fiberglass batt, especially in  
5 residential applications, can't have an asphalt Kraft  
6 facing for vapor retarders, and you read carefully on the  
7 asphalt Kraft facing about every two feet, there is a  
8 warning that says the asphalt Kraft facing must be in  
9 significant contact with the inside face of the gypsum  
10 wall board. The reason for that is not thermal, it's not  
11 structural, it is actually for fire safety because asphalt  
12 Kraft batts are very flammable.

13 So I think the requirements for batts being fully  
14 filled are due to a fire safety reason and nothing to do  
15 with energy performance, so I would like to point that  
16 out.

17 MR. WARE: Thanks, Rick.

18 MR. DUNCAN: Thank you.

19 MR. WARE: Just a quick response to that is that  
20 many of the fiberglass batts that are used have no facing  
21 whatsoever; but you are correct, when there is a Kraft  
22 facing on fiberglass batts, they do need and are required  
23 by Chapter 7 of the Building Code to be in substantial  
24 contact with the finished material.

25 But let's not confuse face batts vs. unfaced

1 batts, particularly with this issue. I think that -- oh,  
2 we have someone else who would like to talk. Go ahead.

3 MS. LUDVICKSON: Thanks. Jill Ludvickson from  
4 Western Pacific Roofing. I just have a comment on the  
5 expense of, I think George said, of the difference in the  
6 full fill for the 2' X 4's and the full fill for the 2' X  
7 6's. For a contractor, it's less expensive for us to  
8 apply it in the labor in the 2' X 6's, and there should be  
9 no reason why we should have to do a full fill if it's not  
10 required, and the R-Value is R13.

11 So, I was just going to make a comment that it is  
12 going to let more people, homeowners, use spray foam if we  
13 don't have to do the full fill.

14 MR. WARE: Okay, thanks.

15 MR. EASLEY: This is Steve Easley again. I was  
16 just going to add that, if you want to reference the IBC  
17 Table 2308.9.1 talks about un-braced walls, so for  
18 example, an un-braced wall, let's say a formed ceiling  
19 wall that's 10-feet, that would require a 2' X 6'. So,  
20 for example, if people just want to have a home with 10-  
21 foot ceilings, for example, that would be considered an  
22 un-braced wall, which would require by Code -- maybe it  
23 would only require R13 plus any specific Climate Zone  
24 requirements; however, because of the fact that they were  
25 2' X 6', you would have to fill the cavity completely,

1 which would be a lot of expense, additional expense that  
2 you're only doing just because of this requirement.

3 MR. WARE: Point well taken. Just a comment back,  
4 most walls in this state have some bracing requirement due  
5 to seismic conditions, but both 2' X 4' and 2' X 6' can go  
6 up to 10-feet, as well, 2' X 4', however, needs some  
7 bracing. So, you're right.

8 MR. EASLEY: I'm talking about -

9 MR. WARE: Those are good observations.

10 MR. EASLEY: Okay.

11 MR. SHELDON: Mac Sheldon, Demilec USA. The  
12 reason for QII, or the reason for full fill fiberglass 2'  
13 X 6' QII is that the fiberglass must be in contact with  
14 the air barrier. Since the spray foam, either open cell  
15 or closed cell, comprises the air barrier, or is an air  
16 barrier material, then there's no requirement for it to be  
17 in contact with the interior surface.

18 MR. WARE: Thanks, Mac. Anyone else on this  
19 particular subject area of the proposed alternative QII  
20 procedure?

21 MR. TALBOT: Gary Talbot, Five Star Performance  
22 Insulation. Just a comment on the full fill here with the  
23 2' X 6' wall. In this Attachment 1, there's a specific  
24 box that points out that an air space may be left between  
25 the surface of the foam and the interior finish in frame

1 wall cavities, provided the thickness of SPFA insulation  
2 has been applied to achieve the specific R-Value.

3 My comment would be, what really is the difference  
4 between a situation where we have a 2' X 8' wall vs. a 2'  
5 X 6' wall? And I'd also put an additional question, would  
6 be that we've already come up with a method of determining  
7 what the thickness in the R-Value is by using probes  
8 already, so I go back to -- is it really necessary to full  
9 fill the 2 X 6 cavity using the spray foam, whether it's  
10 open cell or closed cell, and being that it's also  
11 considered an air barrier, as well?

12 So anything in front of the foam would have no  
13 necessary affect on the thermal performance of the  
14 building, it just creates a dead space, so to speak. So I  
15 just wanted to bring that to your attention.

16 MR. WARE: Okay, thank you. Anyone else?

17 MR. FRANCISCO: Jim Francisco, Sierra Consulting.  
18 I'd like to reiterate what Roger said -- I think it was  
19 Roger -- remember that this material seals at one-inch,  
20 unlike materials that it competes against, and we'll  
21 submit some things in writing before you come to your  
22 final decision, and I think that we will be able to submit  
23 reports, lab reports, that will prove that point, that  
24 there's absolutely no reason to fill a cavity when you  
25 have no air circulating from the outside once it is

1 sealed.

2 MR. WARE: Thanks, Jim, and maybe that's a good  
3 segue into the second area that Roger mentioned from the  
4 industry's perspective, that they have a concern, and that  
5 is language related to air barriers.

6 And we've heard comments from others who have come  
7 up so far, that open cell products, spray foam as a whole,  
8 is considered an air barrier, and a quick reaction to both  
9 the letter that the SPFA has sent in, and your comments,  
10 Roger, regarding that letter in context with the air  
11 barrier. Right or wrong, the current JA7 procedure for  
12 closed cell does indicate that closed cell products are an  
13 air barrier.

14 And the current procedures that are allowed for  
15 all insulation types, the QII procedures, and most of us  
16 in this room who have been in this business understand the  
17 need for air barrier integrity, but the current procedures  
18 are lacking in any specifics related and any performance  
19 criteria related to what the air barrier is, what  
20 constitutes the air barrier.

21 And the information that the industry provided  
22 that you, Roger, has referenced the context of the air  
23 barrier, related to spray foam, there is no such language  
24 in staff's proposal, and there is no language in the  
25 current procedures of JA7 for closed cell.

1           In addition, the reference to the insulation  
2 directory does not provide any guidance on whether that  
3 product truly is an air barrier or not. Insulation  
4 materials of all types that are listed in the directory  
5 have the option of saying that that product type meets a  
6 ASTM E93 vapor retarder criteria.

7           So, the context of the air barrier, while we agree  
8 that that's an extremely important element of the QII  
9 procedures, kind of puts us between a rock and a hard  
10 place. We'd like to fix that going forward for 2013, but  
11 an issue is that it might be premature at this point.  
12 That's my first reaction. Any comments?

13           MR. NESBITT: George Nesbitt. I just want to say  
14 that I had noticed that only the closed cell was listed  
15 under the air barrier and that does seem reasonable that  
16 open cell would also qualify, so whatever we can do to, I  
17 guess, basically the problem is we don't have a definition  
18 of an air barrier? And whether the open cell would meet  
19 that definition. Is that the -- we don't have a technical  
20 definition of an air barrier.

21           MR. WARE: We don't have a technical definition of  
22 it. We have in this draft alternative procedure, we've  
23 included new language that will strengthen what the air  
24 barrier is. But we have purposely not set the performance  
25 criteria because we have felt that we might be stepping

1 out of bounds because that is -- this procedure is outside  
2 the rulemaking, it may be inappropriate for us to provide  
3 a performance requirement where we don't have similar  
4 performance for other insulation materials, or air barrier  
5 as a whole, regardless of whether it's tied to a  
6 particular insulation material.

7           So that's -- we tried to strengthen the language  
8 related to air barriers. I think that, if you're reading  
9 between the lines here, what we'd like to do is use that  
10 definition more or less as a platform for 2013 revisions  
11 and we'd like to tie the definition of an air barrier to  
12 performance criteria, which we agree there is an ASTM and  
13 procedure for that.

14           But our feeling was that we may be stepping out of  
15 bounds if we had a specific requirement in this QII  
16 procedure that we did not have for the other compliances.  
17 Any reaction to that?

18           MR. FRANCISCO: Jim Francisco, Sierra Consulting.  
19 I agree with you, it should be put to 2013 because we're  
20 getting short on the time, anyway and it's something that  
21 we really need to look into and have all the backing  
22 support. I think it would be out of line, as you said,  
23 because it would go beyond what we're trying to do.

24           MR. EASLEY: Dave, with regard to the moisture  
25 barrier issues, most of the moisture migration that gets

1 in wall cavities is not bulk water, water leaks; most of  
2 that moisture migration happens on air currents, so if you  
3 eliminate the air flow into the wall cavity, the only  
4 mechanism left for moisture movement into that wall cavity  
5 is diffusion, and diffusion is a very very small minor  
6 amount of moisture migration in the wall cavity, so the  
7 real culprit is airflow, so eliminating that airflow, you  
8 eliminate many -- most -- of those issues.

9 MR. WARE: I agree, you're perfectly right, Steve.  
10 Any other comments related to the air barrier? This whole  
11 issue of air barrier is critical. For us to have better  
12 performing buildings, we have to do better about air  
13 barriers as a whole.

14 None of the other stuff works and I think staff is  
15 quite aware, as well, that relying on mechanical fixes to  
16 reach 2020 goals is not going to cut it, okay? So we're  
17 fully aware that the I Codes and many other -- well,  
18 several other -- progressive State Codes have air barrier  
19 requirements and performance criteria associated with it.

20 We expect to have exactly those things or  
21 performance requirements like those that are used in other  
22 states in the I Codes for 2013, as well. So, our real  
23 concern is where we should land in the interim between now  
24 and 2013 on this particular subject of air barriers. I  
25 don't see anyone else coming up to talk about the air

1 barriers.

2 MR. SHELDON: Mac Sheldon, Demilec USA. I guess  
3 I'm confused. So, if we all agree that a low density foam  
4 qualifies as an air barrier material, and we all agree  
5 that medium density, closed cell foam, qualifies as an air  
6 barrier material, then why are we not treating them  
7 equally in this joint appendix?

8 MR. WARE: First of all, let's be clear, I don't  
9 believe that everyone carte blanche believes that all open  
10 cell product types meet an air barrier criteria. And I'm  
11 not trying to be critical, I'm just saying that the  
12 integrity of the installed material must be demonstrated  
13 in the recipes of manufactured product types for the spray  
14 foam industry as a whole, must be demonstrated through the  
15 performance criteria of ASTM, that's all I'm saying, just  
16 like any other product type.

17 But what we are saying is, for those products of any  
18 product type, whether it's a membrane material, or whether  
19 it's an insulation material, when that has been  
20 demonstrated and has testing criteria to back it up,  
21 that's what we want to see. Building Officials need that  
22 kind of verification in the field. Consumers and  
23 designers need that kind of certification to ensure the  
24 integrity of quality going forward. And that's all we're  
25 saying.

1           We're in a spot where we don't - it's premature  
2 for us to tag a specific performance criteria on any  
3 product type when we're outside of a rulemaking. That's  
4 really the bottom line here.

5           It would be, for instance -- and I'm not saying  
6 that we can't do it, procedurally, but it does cause us  
7 maybe to gum up the works of what the industry would like  
8 to achieve as this end goal immediately.

9           For us to require a performance criteria around  
10 the context of an air barrier, we have to think it through  
11 as it applies to insulation materials and all product  
12 types. So it's not just an insulation is what I'm saying.

13           The QII procedures talk about the need and  
14 integrity for an air barrier and you can meet that air  
15 barrier, Mac, we agreed, through many spray foam products.  
16 We're good with that. But you can also meet that air  
17 barrier performance requirement through other means, and  
18 so we would need some time to work that through the  
19 language and setting that performance specification and  
20 reference ASTM criteria appropriately. And for us to do  
21 that, that's going to take some time. That's going to  
22 take some thought and we have to go back through all of  
23 the QII procedures and kind of do a global look see,  
24 whereas, I think the industry as a whole would not be  
25 served by that focused effort.

1 MR. SHELDON: So in the interim, we separate the  
2 two types of foam that both pass the test and are both  
3 demonstrated to do so in the Evaluation Service Reports?

4 It really is truly an easy easy test for all so-  
5 called open cell spray foams to pass both the 2178 and the  
6 283, the 2178 being much more difficult than the 283. But  
7 we can pass it with an open cell material of one-inch and  
8 be on the order of magnitude better, actually half --  
9 almost two orders of magnitude better at 75 Pascals. At  
10 300 Pascals, we finally get down to an order of magnitude,  
11 so, I mean, we're talking about a very -- a huge margin  
12 for error, a ten-fold margin of error -- and we know that  
13 if ours passes, everybody's passes, it's a slam dunk.

14 MR. WARE: All right, let's keep that line of  
15 thought rolling. What if -- I'm not sure we can achieve  
16 this -- but what if we include language that ties it to an  
17 ESR Report, an Evaluation Service Report? And any  
18 material that has an ES Report related to an air barrier  
19 meets the criteria of the air barrier portion of the QII  
20 procedures?

21 MR. SHELDON: Because ICCES does not want ES  
22 Reports to be mandatory, how about if we tied it to an  
23 ASTM 283 or 2178 with the threshold of -- well, and you  
24 could tie it and say "as verified by ICCES, but there are  
25 other evaluation services, see, that's my only hesitation

1 on that. I know they've almost got a monopoly, but not  
2 quite.

3 MR. WARE: Well, I think what you're hearing me  
4 say is that we recognize the industry's concern and I hope  
5 that you have heard from me on behalf of staff that we  
6 recognize that the air barrier is a key element of QII.

7 MR. SHELDON: Yes.

8 MR. WARE: Nevertheless, having said that, we  
9 still have to explore the issue of setting a performance  
10 criteria outside of a formal rulemaking, which I think may  
11 handcuff us in that process.

12 I think your points are well taken, I think that  
13 we would like to -- we don't necessarily have a major  
14 problem, assigning a performance criteria, per se, but it  
15 needs to be open-ended so that all materials and other  
16 product types, latex-based foam material, as an example,  
17 can play in that game, as well, membranes can play in that  
18 game, as well, so that we don't tie this strictly to an  
19 insulation material, notwithstanding the JA7, right or  
20 wrong, already does that, okay?

21 We don't necessarily want to throw the baby out  
22 with the bathwater by setting another criteria and  
23 unfairly jeopardizing the allowance of another product  
24 material playing in that same game. Okay? We hope to do  
25 it right, as opposed to doing it wrong.

1           MR. NESBITT: So even though QII requires -- sort  
2 of proscriptively requires an air barrier, it does not  
3 require that we actually do something like a blower door  
4 test and achieve a specific level, does the issue of  
5 closed cell or open cell foam being an air barrier really  
6 matter, then? I mean, either way, does it matter if we  
7 say it is or if it isn't?

8           I mean, I don't have a problem if we say open cell  
9 is, but the truth is, since it's all proscriptive,  
10 basically you're saying we've caulked, you know, certain  
11 holes, and caulked foam cracks that are small, and  
12 whatnot, there is no criteria to really test it, or it  
13 meets any performance standard?

14           Maybe the issue of air barrier is not all that  
15 important, unless, well, I mean it's important, don't get  
16 me wrong, right? Remember, I'm passive house .6 air  
17 change is at 50, none of this 3 air change, come on, we  
18 can do it.

19           But in the context of we have no criteria for what  
20 an air barrier is, I mean, what are we arguing over? I  
21 mean, we should have a criteria, we should be requiring a  
22 certain level of air tightness and, you know, whether or  
23 not that makes the final proposal, it looks like at the  
24 moment it may not for 2013, so --

25           MR. WARE: Okay, thanks, George. Remember here,

1 what -- I don't want to lose focus on what the industry's  
2 primary purpose is, okay? So we could spend a lot of time  
3 talking about the benefits and issues related to air  
4 barriers in this product type, but it is our view that the  
5 industry's primary goal is to achieve QII allowance for  
6 open cell products, and so while we recognize this issue  
7 of air barriers, I'm not so sure we're going to sell it  
8 right now and staff is very open to thinking through this  
9 a little bit more and working with --

10 MR. DUNCAN: Dave? Dave, this is Rick Duncan. I  
11 would like to comment back on something you said a few  
12 minutes ago. You were mentioning some type of test and  
13 Mac mentioned, too, air permeance test, E2178 and ASTM  
14 383, and I just want to be clear, it sounded as if you  
15 were concerned that these tests were specific to spray  
16 foam, or specific to insulations, and I would like to make  
17 it clear that, indeed, they are not.

18 These are very simple tests, they basically take a  
19 slab of material, apply differential pressure, and measure  
20 the airflow through it. And, these types of tests are  
21 used on all types of building products, membranes, board  
22 stocks, fluid applied membranes, house wraps, it's the  
23 same test and they are all used to qualify an air barrier  
24 material to be air impermeable.

25 And as Mac Mentioned earlier, all types of spray

1 foams are able to pass this standard air permeance test,  
2 so there are tests out there that are not material or for  
3 a class of materials specific. That's one point I'd like  
4 to make.

5           The second point is that, when we talk about air  
6 barriers, and, you know, the ABA, I think, or Air Barrier  
7 Association of America, has done a pretty good job  
8 describing the different levels of air barriers. I mean,  
9 an air barrier is not just a material or a construction or  
10 a system, I mean, they break them down into different  
11 levels. You start at the basic building block of an air  
12 barrier material, which there is an air permeance test to  
13 define that, you then take it up to a an assembly level  
14 where you put different air barrier materials together,  
15 along with air barrier accessories, for example, house  
16 wrapped tape, you can build an assembly that's been tested  
17 for air leakage, and then, if you put these altogether  
18 into an entire building outlook, they become an air  
19 barrier system.

20           So I think these degrees of an air barrier need to  
21 be defined. But from a materials standpoint, we are  
22 confident that both open and closed cell spray foam will  
23 perform as an air barrier material and, as such, when it's  
24 used as an insulation, we can guarantee that the air  
25 barrier material will be in contact with the insulation by

1 default, so those are just a couple points I wanted to  
2 make and I don't know if that helps with the discussion or  
3 not, but the testing is not specific to spray foam or  
4 insulation.

5 MR. WARE: Thanks, Rick. We're very much aware of  
6 the ASTM Standard and I'm sorry if I seemed to imply that  
7 it's only related to spray foam materials, no, it is not.  
8 And that's where our rub is, well, both ways: if we  
9 require an air barrier and an ASTM criteria across it, it  
10 cross-cuts many building materials, many of which are  
11 being used out in the field and, by default, then,  
12 building officials would have to inspect for it, and it's  
13 our feeling right now that that may be premature because  
14 we are outside a rulemaking.

15 But nevertheless, we recognize the issue and the  
16 importance of the air barrier, particularly in the context  
17 of what the QII procedures are trying to achieve, so we're  
18 open to working through this a little bit more and see  
19 where we land.

20 MR. NESBITT: So, as a HERS Rater, I wouldn't have  
21 a problem with open cell basically meeting the air barrier  
22 requirements for QII, unless, I mean, there aren't large  
23 gaps between studs and as long as the foam where it's a  
24 top plate where there are wires and plumbing, and the foam  
25 covers that.

1           I think, you know, I don't think we'd have a  
2 problem recognizing that that probably meets the intent of  
3 the Code vs. if I'm going in with cellulose or batts and  
4 they haven't caulked the wires and the plumbing, I don't  
5 think that will constitute narrow barrier.

6           MR. SHELDON: Mac Sheldon, Demilec. Specifically  
7 on Attachment 1, Section 6, page 5, where we're talking  
8 about the homes with conditioned space above a garage, and  
9 we talked about the garage and the adjacent conditioned  
10 space shall be insulated up to the subfloor, and then we  
11 say that SPF insulation shall cover the gaps between the  
12 header and the floor -- I'm sorry, the next section, homes  
13 with *no* conditioned space over the garage, the band joists  
14 where the garage transitions to the attic above  
15 conditioned space shall have an air barrier installed in  
16 contact with the edge of the attic insulation, so our  
17 attic insulation would presumably be open cell foam. And  
18 then, the closed cell spray foam insulation may serve as  
19 the air barrier.

20           So that would mean that we've insulated right down  
21 to the joists, but at the joist level we have to spray  
22 some closed cell foam? It's awkward. I think the path of  
23 least resistance is just to strike all of the exclusions  
24 to open cell foam and that would be the easiest thing we  
25 could do.

1           MR. WARE: Mac, you point out a good spot in both  
2 the proposed procedure, alternative procedure for spray  
3 foam, and what has been placed. And the current procedure  
4 in JA7 for spray foam, this language comes straight across  
5 from that, and both the industry and ourselves have  
6 purposely not tried to reinvent the wheel here. So we've  
7 pulled over poor language that is allowed, I mean, that's  
8 really the bottom line.

9           And for 2013, certainly, we're going to fix this,  
10 okay? We want to make it better. We want to work with  
11 all insulation manufacturers and all primary product  
12 manufacturers that can ensure that the intent of the QII  
13 procedures are maintained, but, better than that, it's  
14 easier and much more explicitly stated what kind of  
15 performance criteria is needed and what kind of inspection  
16 is required.

17           But we can't fix that -- everything -- this go-  
18 round. Okay? We probably can't fix it at all for 2013,  
19 as well, but we do have that on our marching orders for us  
20 to work on.

21           So, again, I'd like to say, regarding the air  
22 barrier stuff, we're open to looking at it, but I think  
23 you've heard from us related to what we believe some of  
24 our constraints are. Is there any other new information  
25 related to air barrier? Go ahead, Jim.

1           MR. FRANCISCO: No new air information, per se. I  
2 was just going to say, as I understand you, and correct me  
3 if I'm wrong, the alternative does not allow us to make  
4 that change at this time. Is that correct? Pretty much  
5 so?

6           MR. WARE: Well, the alternative does not have  
7 language in it that explicitly states that open cell can  
8 be used as an air barrier, and the reason for that is to  
9 be consistent with the current method in JA7, and to be  
10 consistent with the implied allowance for stuff in the  
11 referenced compliance documents, we have made no change  
12 because it would be too cavalier for us to make a  
13 statement in the new method that open cell product types  
14 can be used as an air barrier without some criteria behind  
15 it, notwithstanding there was -- I'm not sure what the  
16 criteria was that allowed spray foams to be there, but  
17 nevertheless, that's how we arrived at the language here.

18           MR. FRANCISCO: For some in the room who have not  
19 been at all the meetings that George and I have been  
20 attending, there has already been a movement made for the  
21 2013, there have been suggestions made that fiberglass,  
22 cellulose, and foam be broken apart in different tables  
23 with different criteria, I don't know if it will happen,  
24 as comments have been put forth.

25           I think right now the most important thing is that

1 we should not have to fill the cavity. If we could get  
2 way with that, I think the air barrier can wait for the  
3 other hearings to take place.

4 MR. WARE: Okay.

5 SHELDON: I just wanted to make one quick comment  
6 about the air barrier material and why in a couple of the  
7 ESRs we see, well, in all of the ESRs we see a difference.  
8 Some say 3.5 inches, some say 5.5 inches, and that doesn't  
9 mean that the material doesn't qualify as an air barrier  
10 until that point, it means that that particular  
11 manufacturer doesn't believe that anyone would install  
12 less than three and a half inches specifically on the  
13 underside of a roof deck.

14 And that's what it relates to. It says in the  
15 ESR, it says that it qualifies as an air barrier material  
16 in Section 806.4 of the Code, which is the unvented attic,  
17 so it's referring to that.

18 I have absolutely no doubt that all of them would  
19 pass, but honestly, we don't want people spraying one  
20 inch, that's why we don't even publish the results for our  
21 one inch tests. We would certainly share them with anyone  
22 here at the CEC, but we believe the three and a half  
23 should be the minimum and that's why we published those  
24 numbers.

25 MR. WARE: Thanks, Mac, for that information and

1 I'm fully aware of the content of why Evaluation Service  
2 Reports related to spray foam and the general intent of  
3 the information that is laid out in those reports as it  
4 applies to air barriers.

5 But I think you just illustrated a point of  
6 concern for staff on this issue because, if as an example  
7 we use an ES Report as a criteria, as a benchmark for air  
8 barrier, then, as you pointed out, many of those reports  
9 for some product types and manufacturers indicate that you  
10 have to have a lot of insulation, you know, an exorbitant  
11 amount of thickness to achieve a given R-Value that would  
12 be required by the Code, in many cases - five and a half  
13 inches. Okay?

14 And I agree with you, it's probably not necessary  
15 to have that many inches necessary to meet the air barrier  
16 case of the performance criteria, but there needs to be  
17 someplace that inspection officials and HERS third party  
18 verifiers can go to to verify, you know, whatever needs to  
19 be there, the amount of inches that need to be there, that  
20 are necessary to meet that air barrier performance level.  
21 So, we need to talk some more on how we work this, I don't  
22 know where we're going to land.

23 MR. SHELDON: Yeah, understand that we are very  
24 very willing to work through this whole issue and provide  
25 any of the documentation that would be requested of us.

1 And I do agree with Jim that the 2' X 6" full fill ends up  
2 being much more important than the cell.

3 MR. WARE: Okay, thank you. Why don't we move on  
4 to another area that Roger mentioned as a concern and  
5 focus our attention on, and that is the area of R-Value  
6 measurements and the necessity of probes or measurement to  
7 be calibrated, etc. Roger, can you, I don't know, explain  
8 that a little bit more?

9 MR. MORRISON: Roger Morrison, Deer Ridge  
10 Consulting. I have calibrated probes for insulation, but  
11 what I usually use is a piece of bent coat hanger and a  
12 tape measure. Mac is holding up a calibrated probe.  
13 These are limited in thickness, five and a half inches,  
14 and so basically I carry one, but I never use it because  
15 I'm often measuring thicker than five and a half inches  
16 and that isn't going to cut it.

17 So, certainly the draft was indicating that you  
18 needed a calibrated probe, and we're just suggesting that  
19 other methods are applicable and appropriate.

20 MR. WARE: Is it the word, "calibrated," that is  
21 of concern? Or if we got rid of the word "calibrated," as  
22 an example, would everything else be okay?

23 MR. MORRISON: Well, there is another issue and I  
24 think the draft says that a calibrated probe must be left  
25 on site for the HERS Rater? And so, you know, if that's

1 removed, I mean, the alternate language we were suggesting  
2 here is that "probes for inspection of installed thickness  
3 of SPF insulation, HERS Raters will verify that proper  
4 thickness of insulation has been applied using a probe,  
5 gauge, or device capable of measuring the installed  
6 thickness to an accuracy of plus or minus one-eighth  
7 inch." That's what we're proposing.

8       You know, it doesn't require a calibrated probe, it  
9 leaves it up to the HERS Rater to determine how he's going  
10 to make that measurement and they're certainly capable of  
11 doing that.

12               MR. WARE: I mean, we certainly agree with what  
13 you're saying and it may be a little extraneous to use the  
14 word "calibrated," but I will point out that the current  
15 JA7 method for closed cell does indicate that the probe or  
16 measurement device needs to be left behind with the HERS  
17 verifier.

18

19               So again, while I think we have attempted to  
20 strengthen the measurement section in this alterative  
21 procedure that we are reviewing some of the elements, or  
22 many of them are very much the same, like it or not.

23               MR. MORRISON: I understand, just trying to make  
24 an improvement here to more accurately reflect what's  
25 going on in the field.

1           MR. WARE: I think we welcome those comments and  
2 respond to them fairly successfully.

3           MR. NESBITT: George Nesbitt. I would say if  
4 you're going to be wrong, be consistent. Consistency is  
5 better than inconsistency. I would, you know, if we're  
6 talking about in furred wall cavities, it's pretty easy, I  
7 can tell whether it's a 2' X 4' or a 2' X 6', I don't need  
8 to measure, as long as it opens, it's full, it's easy, the  
9 question becomes, you know, the little voids that you  
10 sometimes get in it, even with a closed cell, if I have a  
11 2' X 4' or a 2' X 6', I can judge the depth from the  
12 plane, the surface of the studs, and you know, put across  
13 two studs and measure back as opposed to curving.

14           I think where the measuring becomes harder is in  
15 cases like a crawl space or an attic, if the insulation is  
16 so blown over, I'm completely over the joist, and you no  
17 longer have anything to gauge from. I certainly wouldn't  
18 poke a hole in the insulation if I didn't have to. But  
19 the HERS Raters hopefully can afford to buy ourselves one  
20 caliber measuring tool, although, in this market maybe  
21 not.

22           MR. WARE: Well, just as a point there, Roger had  
23 suggested coat hangers, fine, so I'm sure you have that.

24           MR. NESBITT: I've got a closet full of coat  
25 hangers. I always thought they were used for something

1 else, but... Yeah, if it's something you don't want to  
2 change, to keep it consistent with everything else, and  
3 then I don't know, is there a plan to go through this  
4 section as part of the 2013 and rewrite the QII and clean  
5 things up?

6 MR. WARE: Yeah, our intent at least at this  
7 juncture is to use the format of this proposed procedure  
8 for all procedures that would represent the background  
9 reference material for 2013, so I'm sure I don't want to  
10 suggest this at this point, but the overarching desire of  
11 staff is that we have procedures that are straightforward.

12 The intent is, you know, explicitly stated,  
13 understood, and it's easy for third party verifiers in the  
14 field, including enforcement officials to understand what  
15 the steps are to ensure compliance with QII procedures.

16 So we believe that this is an improvement over  
17 what we have, and so our thinking right now is that this  
18 would be the format that we would use for all of the  
19 procedures that we have, as we would update those  
20 procedures to mimic this one, and then there would be a  
21 process, a public process, for each one of those  
22 procedures and we would take comment at that time.

23 MR. NESBITT: So that would be published, rather  
24 than, say, as the workshops we've been doing, per se, it  
25 would be whenever you publish draft language for comment?

1 MR. WARE: We would publish draft language on QII  
2 -- let's back up -- we would publish and seek comments on  
3 the entire set of information in the records, appendices.  
4 Okay? And so the QII is a portion of the information that  
5 is related to other sections, so the reference appendices  
6 would also be on the table at that time.

7 MR. NESBITT: Yeah, I would just say, just right  
8 now it's essentially written that you have to probe the  
9 insulation and, like I said, I would tend to gauge it off  
10 of a known dimension and there are different ways to gauge  
11 the depth rather than saying I have to go stick something  
12 in the insulation.

13 You know what happens, what we get with HERS  
14 Raters is, "We went and screwed up the insulation," that's  
15 why it doesn't pass QII. So that's what all the  
16 fiberglass guys say.

17 MR. WARE: Okay. If there -- oh, we have a  
18 comment. I can't see it, why don't you read it?

19 MS. LENTZ: This is John Mejio. His question is,  
20 "If one wants to use spray foam insulation as an air  
21 barrier and reduce the amount of insulation in the framing  
22 cavity, does it make sense to require an infiltration  
23 measurement via blower door to validate the on-site  
24 effectiveness of the air barrier?"

25 MR. WARE: One of the things that we have proposed

1 for 2013 is a requirement for air leakage and if that  
2 procedure is successful, then, like it's suggested by the  
3 caller, this issue to a certain extent goes away, that is,  
4 we would maybe still have language for the 2013 standards  
5 related to air barrier, but the performance criteria is  
6 directly maintained by the requirement in the 2013  
7 Standards for air leakage control. And that's a big help  
8 for everyone, okay, enforcement officials, staff, and the  
9 intent of the Commission Standards, and certainly building  
10 designers and builders and consumers.

11 So, we're not there yet, but I guess the short of  
12 my comment again is, yes, our intent is to have an air  
13 leakage control measure tied to the 2013 standards that  
14 would basically require blower door kinds of testing. Any  
15 other questions?

16 Roger, as you mentioned, so we finished the  
17 Attachment One here in the alternative, before we move on  
18 to some of the others, you have a number of other edits  
19 that you mentioned. We can work with you guys on those, I  
20 assume those are not major and, as I reviewed this in the  
21 last several days, I found a few inconsistencies, as well,  
22 so we will try to fix those together, okay? All right.

23 Let's go back to where we are, we've kind of gone  
24 through the alternative QII procedure. Again, to  
25 reemphasize, this procedure can be used as an adjunct to

1 the current closed cell procedure in JA7, so for HERS  
2 verification, either one of these procedures, we are  
3 proposing, can be used for closed cell, but this would be  
4 the procedure used for open cell product types.

5 Now, in order to accommodate that procedure, there  
6 are a whole bunch of stuff that needs to be updated in the  
7 joint appendices, as well as Residential Compliance Manual  
8 in the Compliance forms, themselves, so we'd like to go  
9 through those and we can take as much or as little time on  
10 those things as necessary to respond to your comments and  
11 suggestions.

12 So, what is new in the Joint Appendices? The  
13 primary thing that is new, other than edits and  
14 modifications necessary to represent the language that we  
15 have proposed for the alternative QII procedure, is we've  
16 included a new section on JA4 of the reference appendices  
17 that calls out information related to spray foam as a  
18 whole and, in essence, all we've done is drafted the  
19 language for closed cell and open cell products that are  
20 in the upfront portion of the alternative and included  
21 that in a new section in JA4, Section 4.1.7.

22 And then there are a number of editorial changes  
23 that are necessary throughout the tables and things of  
24 that sort to make the notations necessary for closed cell  
25 and open cell throughout the assumptions and various table

1 categories.

2           One thing to note is that, in the tables where  
3 cellulose and open cell has been noted, we have also  
4 included that that is appropriate to use that section of -  
5 - the JA4 tables are appropriate to use for loose film  
6 materials used in [inaudible], etc. They typically have  
7 the same density resulting in the same per inch that is  
8 assumed to be used for cellulose and open cell.

9           So, let's see if I can get in here and grab that  
10 attachment. This is the language that we're recommending  
11 be added to the referenced appendices, it would be a new  
12 section, Section 4.1.7, it is specific to spray foam  
13 products as a whole, and it is the same language that is,  
14 as I mentioned, in the upfront section of the alternative  
15 QII procedure for spray foam. Nothing new in that  
16 section, unless there's anything, if anyone wants to  
17 comment on.

18           And then, sprinkled throughout the JA4 Tables,  
19 we've updated the information and notations and assumption  
20 language that is necessary to be modified to accommodate  
21 the call-out, the differences of performance information  
22 between open cell and closed cell information.

23           Is there anyone on the phone who wants to make a  
24 comment? Okay, good, I don't know if there are any  
25 comments on this section that anyone wants to make?

1           MR. MORRISON: Dave, I'd like to thank staff again  
2 for doing such a diligent job of recognizing the cascading  
3 changes that need to be taking place through multiple  
4 documents, and the only issues that we had identified was  
5 Attachment 2, we've already discussed, except minor  
6 editorial stuff.

7           MR. WARE: Okay, good. As you can see, most of  
8 the information in each of the tables is pretty  
9 consistent, so as Roger just said, there's cascading  
10 changes that need to be made and ensure quality and  
11 completeness, and every one of the tables, we hope we have  
12 done a good job about that. When you scroll through the  
13 tables, you can see the same information is pulled  
14 through.

15           I would like to point out that Table 4.3.3,  
16 Nonresidential Construction metal frame, we have added new  
17 U-Values that both represent rigid insulation and the  
18 combination and certain frame types that are being used in  
19 the field right now, the combination of exterior rigid  
20 insulation and interior spray foam insulation, hybrid  
21 system with light density material, as well, and we  
22 believe that this is an improvement, and because these U-  
23 Values must be used for compliance purposes, adding this  
24 new column of expanded assemblies allows more explicitly  
25 those kinds of materials to be installed without any kind

1 of major hiccups in the field. So that benefits  
2 everybody. So that is newness that relates to the spray  
3 foam activity, but also relates to other product types and  
4 represents a big portion of the market right now.

5 MR. NESBITT: George Nesbitt. So does this mean  
6 qualify of insulation actually matters on high-rise multi-  
7 family and non-residential? I did notice in the start of  
8 Attachment 1, the purpose and scope, you know, it says it  
9 applies to low-rise residential, and then it also says it  
10 applies to high-rise residential, non-res, and require  
11 HERS verification. I don't have the Attachment 2, I guess  
12 there weren't enough printed.

13 MR. WARE: Let's see if I understand your  
14 question.

15 MR. NESBITT: What this seems to be saying is that  
16 we're going to have QII for non-residential.

17 MR. WARE: Let's see if I can answer that  
18 question, that's a loaded question.

19 MR. NESBITT: Haven't you heard me pull out one  
20 before? I've been saying that for some time.

21 MR. WARE: The new section in the Joint Appendices  
22 Section 4, what you're looking at right now, 4.1.7,  
23 applies to spray foam that is used in both building types,  
24 spray foam as a whole. So this is general guidance  
25 related to spray foam and includes the tables of R-Values

1 per inch that can be used.

2           However, the tables of JA4 apply to all building  
3 types with the exception of one particular metal frame  
4 building that is called out for non-residential buildings.

5           But even going further, to respond, George, since  
6 you opened up that issue, closed cell product types are  
7 required to be HERS verified when they are installed in  
8 non-residential buildings. That is the current  
9 requirement in JA7. And that same requirement is rolled  
10 over into the Alternative QII Procedure.

11           So we don't know how much of that is being done in  
12 the field, but we do know that is the requirement and we  
13 have heard from Building officials. The difficulty  
14 concerning or inspection for installed R-Value, even  
15 though closed cell materials typically don't have -- are  
16 not being applied very thick, unless they're being applied  
17 at the roof line, but again, I want to emphasize for  
18 closed cell materials, they must be HERS verified for non-  
19 residential buildings and that's no change from  
20 [inaudible].

21           MR. NESBITT: And is that whether -- well, you  
22 can't take QII in non-res as a performance path, so that's  
23 -- I mean, is that then a mandatory requirement? Or is  
24 that a package requirement? It's --

25           MR. WARE: First, think of loading order, if you

1 will, to use a term that likes to be overworked these  
2 days, but probably appropriate. The context of QII is to  
3 ensure thermal integrity. The secondary process of QII is  
4 to provide an energy credit.

5           So from a non-residential standpoint, the issue  
6 that has been viewed in the adoption of the language in  
7 QII procedures for closed cell materials says that, when  
8 they are in installed in non-residential buildings, we  
9 want a method that helps us ensure that we have the right  
10 R-Value.

11           Even though there's no secondary loading order  
12 energy credit allowed for that in nonresidential  
13 buildings, it was deemed necessary by building officials  
14 and others that they have some quality control, if nothing  
15 else, to help regulate the industry going forward, so  
16 that's no change.

17           And, as I said, there's no energy credit  
18 associated for non-residential building compliance,  
19 however, when you look at installation procedures for  
20 residential, yes, you do get an energy credit and, more  
21 importantly, it helps to ensure the quality of the --

22           MR. NESBITT: Right, for low-rise, yeah. I mean,  
23 I've been on plenty of high-rise multi-family projects and  
24 I can tell you, the quality of the insulation installation  
25 is as poor as it is on low-rise. So, for some time I've

1 asked whether QII matters in non-res, so...

2 And apparently we currently don't recognize it, so I  
3 guess that means we're just evaluating it completely in  
4 the computer and not -- you can't take any credit for  
5 actually doing a good job if you did one, so...

6 MR. WARE: Well, actually, in non-residential  
7 compliance, the performance tools do not devalue the  
8 insulation installed - assumed installed insulation,  
9 that's only done on the residential compliance programs.

10 MR. NESBITT: Which I think the way it's done in  
11 the software is you get -- if you take QII, you reduce the  
12 U-Value, so I think the table, all the appendixes are de-  
13 rated, no, maybe the nonres specific tables haven't been  
14 de-rated, I mean, some of them are not specific to non-res  
15 or res, some of them.

16 MR. WARE: And correct me if I'm wrong, if I am  
17 -- and I don't believe that is quite true. The JA4 tables  
18 are basically ASHRAE comparable path tables, there are  
19 some situations where staff has taken some liberty on  
20 metal frame assemblies, okay, where we have used certain  
21 assumptions for the zonal method to arrive at an  
22 equivalent parallel path.

23 Again, if you will, but nevertheless, those are  
24 ASHRAE standard U-Value calculation procedures that  
25 represent the tables, what happens in the residential

1 compliance tools, the program takes these numbers and then  
2 applies the factor to them to reduce the assumed reduction  
3 in installation quality.

4 MR. NESBITT: Yeah, maybe I misread it and maybe  
5 it is written as "add to the U-Value," which makes it  
6 worse.

7 MR. WARE: But that does not happen for non-  
8 residential performance tools.

9 MR. NESBITT: It's certainly something we should  
10 have, the non-res, I mean, the laws of physics apply  
11 equally.

12 MR. FRANCISCO: Hey, Dave, when and will this be  
13 published on your site?

14 MR. WARE: This method is on our website right  
15 now.

16 MR. FRANCISCO: It is? I missed it.

17 MR WARE: There are four -- I'm not sure, it's  
18 been a while since I've gone on the website, but if you  
19 tag the valuable report, all of these are attachments to  
20 it. You have to look through, get through the first five  
21 pages of narrative, and then all of a sudden you'll be  
22 into the attachments. No other comments on this?

23 Okay. Let's move to the next section, which is  
24 the Residential Compliance Manual. And, again, we've had  
25 to make editorial changes to the manual to accommodate the

1 purpose of the activity in the Application for Compliance  
2 Option for Open Cell, a QII procedure for Open Cell, and  
3 so while doing that, we've also taken the liberty to  
4 update certain sections and pieces of information in the  
5 compliance manual, particularly in Chapter 3 related to  
6 insulation and the first bullet there calls out -- there's  
7 some ventilation requirements, relatively new ventilation  
8 requirements that have been updated in the California  
9 Building Code, and so we have updated the information to  
10 the Compliance Manual for that.

11           We've included descriptions of unvented attics and  
12 then we have rolled in appropriate language into Chapter 3  
13 that applies to spray foam and I think better calls out  
14 the differences in product types between closed cell  
15 material and open cell material.

16           And so, if we take a look at that information, we  
17 - in the first part of Chapter 3, Section 3.3.2, related  
18 to roof sheeting insulation, we have included language  
19 that talks about the ever-convoluting State Building Code  
20 Requirements related to ventilation where there  
21 essentially are two requirements.

22           And one of the things that we have tried to do  
23 responding to this issue of inconsistency in the Building  
24 Code related to ventilation, but more globally in response  
25 to other compliance elements that are allowed in the

1 Energy Code, for instance, radiant barriers and things of  
2 that, that have been tied in the past to ventilation, we  
3 need to think of this issue, that the Building Code says  
4 that ventilation is good, okay?

5           It also allows some other things, but we'll get to  
6 that in a second. But one of the things we had tried to  
7 do from staff's perspective is not to get wrapped around  
8 the issue of is the ratio of ventilation 1:150, or is the  
9 ratio for ventilation, that pre-ventilation area, 1:300,  
10 if and when you need a vapor retarder, that's not the  
11 issue from staff's perspective.

12           The issue is the need for ventilation, okay? And  
13 so this doesn't necessarily impede the proposed QII  
14 procedure going forward, but we wanted to include  
15 information related to the two pieces of the Building Code  
16 that are allowed, and it's our assumption and our  
17 understanding from talking to building officials that they  
18 will utilize as a policy either one of these and, in some  
19 cases, they will utilize both of them and, in some cases,  
20 they will bloody well decide on their own what the  
21 ventilation requirements there are, which they can do.

22           So our information out to you is check with the  
23 Building Department. Okay? Because we don't really know  
24 what they might be requiring in that area and, of course,  
25 you've got fire safety overlying requirements in many

1 jurisdictions throughout the state.

2           So we also have included language related to  
3 unvented attics, the language that is here is very closely  
4 aligned with the current language that earlier was  
5 improved in the International Energy Conservation Code and  
6 that rolled into the State's adoption of Volume 2.5,  
7 Residential Code, and so we have included that language  
8 here, as well. We hope that that is a help, that it also  
9 is just one more piece of the general information that  
10 designers, builders, and building officials can take  
11 whatever need to utilize or not.

12           And other information, then, more specifically  
13 that has been included in the modifications to the  
14 residential compliance manual are purposely to ensure that  
15 we have the right, as Roger says, again, cascading  
16 elements of the proposed QII procedure represented in the  
17 general design that's [inaudible].

18           And looking at this again late last night, I  
19 noticed that we have a few inconsistencies, and I'm sure  
20 Roger has put his time to it, and there are a couple  
21 others, but generally this information is exactly the same  
22 as what we have reviewed so far. Any comments? Okay,  
23 that's what we like. Okay.

24           The last attachment and one of -- like it or love  
25 it, I guess, if you're a HERS Rater, in particular - is

1 the necessity to fill out the appropriate inspection  
2 forms. And so we have -- it has necessitated -- the  
3 proposed QII procedure has necessitated making  
4 modifications to both the installation, the framing and  
5 the insulation stage checklist of the CF4 and the CF64  
6 forms, and this is just an example on this particular  
7 slide what some of those changes have been.

8           And if we back up and I'm successful, again, these  
9 attachments are all part on the website and all part of  
10 the staff Evaluation Reports, so you'll see all these  
11 attachments to it.

12           This is the information that had been previously  
13 there, some of it -- well, most of it, as an example, have  
14 been specific to spray foam as a whole, and did not  
15 delineate whether that was an open cell or a closed cell  
16 product. So, wherein language in the form of information  
17 represented general criteria for foam, we more or less  
18 have left that alone. We've added language where it was  
19 more appropriate for interior and exterior, and we've  
20 added language for spray foam related to inspection that  
21 is necessary to ensure that it has the right installed  
22 thickness.

23           These forms, by the way, are again utilized by  
24 HERS certified Raters and they are downloaded or inputted  
25 into the directory electronically, so we can go back and

1 find this information, albeit we don't have very  
2 sophisticated processes for doing that yet, but the  
3 writing is on the wall that that is what we intend to do  
4 with this information. Okay, so it is to a great degree  
5 garbage in, garbage out, we rely on the integrity of the  
6 HERS installer to get the information in there and provide  
7 any additional comments, but if we want to go back right  
8 now and look at how many installations that have been HERS  
9 verified are done with spray foam, we can know where, we  
10 know if they failed, we know if they passed, we can find  
11 any of this information. And it's true for any of the  
12 other installation types, as well, okay, I don't mean to  
13 imply that we only do it for spray foam, but that is one  
14 of the purposes for having this -- requiring that this be  
15 done electronically and deposited in the directory, and it  
16 allows us to go back into that information and find out  
17 whether these installations are being HERS certified for  
18 existing buildings. [Inaudible], so we can screen for  
19 existing permitted activity vs. new permitted activities,  
20 what kind of -- let's pick insulation as a whole -- what  
21 kind of insulation is being used in existing vs. new? The  
22 Commission staff doesn't care, we're about energy, okay,  
23 saving energy, but it allows us to age whether the  
24 information that we're providing through the QII process  
25 is being used, whether it is too complicate, and then, as

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1 I said, to mine various pieces of the performance data  
2 that we can get out and help us structure better standards  
3 going forward. Any comments on the forms?

4 MS. LENTZ: There is comment.

5 MR. WARE: Okay.

6 MS. LENTZ: So this is from Mark - there is no  
7 last name. He says, "The EMV21 and the EMV22 both need  
8 some major changes, the EMV21 has questions that cannot be  
9 entered in until final, and the EMV22 has questions that  
10 can only be answered at rough. Will this be taken into  
11 consideration and the forms revised?"

12 MR. WARE: Good comments, but I'm not sure how to  
13 respond to that. "Entered in at final," I guess I would  
14 encourage him to come back with more specific comments.  
15 It's still necessary, whether it be at final or in one of  
16 the phases of construction that this information is  
17 entered by the HERS Raters, so I'm not sure what the --

18 MR. NESBITT: I think one of the checklists is  
19 more the sort of thermal bypass type pre-insulation, and  
20 the other is more the actual insulation, although, I mean,  
21 what he's specifically is meaning, beyond that I don't  
22 know.

23 MR. WARE: Yeah, and if we're understanding the  
24 question, that's correct, the framing stage is more of a  
25 construction element, ensuring the integrity of all the

1 stuff that's necessary, actually to ensure that there is  
2 low air leakage via the maintenance of the air barrier,  
3 which we've already said is very critical. And then the  
4 other compliance form is at the end of the process, which  
5 is more ensuring that the product meets the installed  
6 [inaudible].

7 MR. NESBITT: I have three things -- George  
8 Nesbitt -- that are verification-related, although I have  
9 not seen those forms. But one of them is on page 8 of  
10 Attachment 1, it talks about minimum thickness of open  
11 cell or closed cell below like HVAC equipment platforms.  
12 But it says the overall R-Value shall meet the required  
13 values on the compliance document. I don't know if this  
14 is reflected in the Forms. So this means that you have to  
15 do a weighted average, so if you are required to have R30,  
16 but you're only putting in R19 under the platform, that  
17 you would actually have to have more than R30 everywhere  
18 else to get to an average of R30?

19 MR. WARE: Correct. That's correct practice.

20 MR. NESBITT: Okay. The other thing is I noticed  
21 on page 8 of Attachment 1, in regards to spray foam and  
22 recessed light fixtures, I was on a project I did the  
23 energy consulting on, I also did air sealing and installed  
24 the HVAC system, someone else screwed up the insulation,  
25 and the installer told the builder that they could not

1 install cotton batts next to IC airtight recessed can  
2 lights. The builder went to UL and UL said they are rated  
3 for contact to all combustible materials, so I found it  
4 kind of curious that you cannot spray foam against an IC  
5 rated can and kind of require an expensive box. Now, I  
6 don't know, obviously, what the foam people say about  
7 foaming against IC rated cans, that would be interesting  
8 to hear that. And then I have one other item, so maybe if  
9 someone wants to respond to that, that would be fine.

10 MR. MORRISON: The procedures here in the state  
11 are consistent with the position of the Spray Polyurethane  
12 Foam Alliance regarding spray foam and direct contact with  
13 IC rated fixtures.

14 MR. NESBITT: And then the third item is in  
15 unvented attics, when the spray foam is used, page 4, I  
16 think it's in two places, but it's on page 4 of Attachment  
17 1 "unvented attics where SPF insulation is used and fuel  
18 burning appliances are present in the attic, HERS Raters  
19 shall notify the appliance manufacturers allowance for the  
20 equipment used in unvented applications." Do you want me  
21 to clarify that? I mean, you know, it seems more like  
22 either a Building Official item than a HERS Rater item.  
23 Are we saying you can't have sealed combustion appliances,  
24 or I have to know -- do manufacturers say whether you can  
25 install a furnace in the attic? I mean --

1           MR. WARE: This language was actually suggested by  
2 a representative of CALBO and we, staff, went with them  
3 back and forth on the pros and cons of any language that  
4 would require HERS to go beyond what was the intent of the  
5 QII procedures, in this case, Health and Safety, Fire  
6 Safety, or unvented attics related to sealed combustion  
7 gas appliances, some might be installed in the attic. And  
8 nevertheless, building officials felt that if we, the  
9 Commission, is going to rely on HERS Raters to look at the  
10 quality of the installed insulation and, in this case, in  
11 unvented attics, then they ought to provide a secondary  
12 check on whether that -- that the type of appliances up  
13 there, that doesn't mean you have to check it, but they  
14 can sense, they can tell whether this is a sealed  
15 combustion appliance or not, and whether the installation  
16 -- in this case, foam, in particular -- that is required  
17 to have special fire resistance performance elements  
18 associated with it meet that. And so the language  
19 basically says, "Can it be used, or can it not?" It's not  
20 very specific.

21           And I think, to some degree, what was being  
22 suggested and also realized by the Building Officials that  
23 were providing this to us is that they are not -- this  
24 language doesn't obfuscate Building Officials who are  
25 required to ensure consistency with the Mechanical Code,

1 and consistency with Chapter 7 Buildings Code related to  
2 fire resistance materials, and Chapter 26 for foam  
3 products, as a whole, it just says it wouldn't hurt to  
4 have, if unvented attics are going to be used more because  
5 we haven't had that in a Code per se and it hasn't been  
6 used extensively in the market, it wouldn't hurt to have  
7 another item, that's all I think they were intending.

8 MR. NESBITT: Yeah, well, I don't see any language  
9 to say necessarily that the HERS Rater would verify, say,  
10 like ignition barriers when it's covered with sheetrock or  
11 a coating, or is inherent -- it seems perhaps like this is  
12 something, I mean, asking too much of a HERS Rater. I  
13 mean, the likelihood of anyone putting a natural draft  
14 appliance in an unvented attic is hopefully small, which  
15 would be I think the biggest -- I would, as a contractor,  
16 call out something stupid if I saw it, but this is more --  
17 I mean, this is basically saying the HERS Rater needs to  
18 know the whole Mechanical Code and, really, this has more  
19 to do with combustion ventilation supply and whether it is  
20 power vented, or sealed combustion, or natural draft, and  
21 a bigger sort of Health Safety issue. I'm not saying we  
22 shouldn't teach HERS Raters to know what is stupid and to  
23 tell people if they see something that they believe is  
24 stupid, I'm just not sure if this is something we want and  
25 something we have to do.

1           MR. MORRISON: I'd like to clarify a point that  
2 George just raised regarding contact with the IC  
3 luminaries. The industry does not believe that that is a  
4 fire issue, it's more of a product performance issue. The  
5 temperature of the foam is not going to get up to ignition  
6 points, but it could get up over the maximum surface  
7 temperature of the various products and that's why the  
8 position of the industry is to cover those before you  
9 spray them with foam, just something to separate the hot  
10 luminary casing from the spray foam.

11           And if the luminary is there and has some  
12 installed contact to foam, for instance, overspray or  
13 something like that, that certainly would not be an issue  
14 because we're not particularly worried about the  
15 performance attributes of overspray.

16           MR. NESBITT: Someone gave me my own mic!  
17 Dangerous. Dare I then bring up that we should have our  
18 R-Value over the recessed light, especially if we're  
19 boxing it off? I have, well, in retrofit applications, if  
20 I can, I'll go to an IC rated airtight can, get rid of --  
21 it's a pain in the butt to build boxes, typically,  
22 especially in existing -- I've actually built some pretty  
23 top boxes for speakers, so it's common that people put  
24 speakers in their insulated ceilings, we should really  
25 have airtight insulation contact rated speakers. So I've

1 built some complicated foam boxes, you know, and tried to  
2 achieve some more value, as well as additional over it.  
3 So rather than having these ending up with a big gap, so...  
4 Okay, it says the exterior of the box may, then, be  
5 insulated. Maybe it should say "shall be."

6 MR. MORRISON: Roger Morrison, Deer Ridge  
7 Consulting. On Attachment 4, Dave, the only thing that I  
8 would like to point out that may not be clear in our  
9 written communication is, on page 7 of that attachment, if  
10 you look at that first fat box there, about the middle of  
11 your screen, and if you scroll down to the bottom box,  
12 there appears to be duplicate language. In other words, I  
13 think those two boxes are covering the same thing, so I  
14 just wanted to bring that to your attention.

15 MR. WARE: You're right. We could probably  
16 eliminate one of these boxes without hurting the intent.  
17 I believe that in making the edits to the forms, because  
18 they are electronically downloaded, we did not eliminate -  
19 - and don't hold me to that statement -- but we did not  
20 eliminate any line item, we added to it, at best. And so  
21 you'll see, I mean, the intent of the bottom box is  
22 recessed light fixtures, and the intent of this box that I  
23 have my cursor on is also recessed light fixtures, but the  
24 bottom box talks about spray foam, and it very well  
25 -- we could eliminate one of those, but because there are

1 some special criteria related to spray foam as a whole, we  
2 put it in both. I think your point is well taken and we  
3 maybe should take it out and leave language in there.

4 Okay. You're really confused us now, that's a lot of  
5 work, more work that we've done so far!

6           Okay. Any other comments? We've run through the  
7 four attachments that represent the culmination of staff's  
8 partnership with the Spray Polyurethane Foam Alliance to  
9 develop an approved QII procedure for open cell products.

10           We've had some very good comments and some  
11 concerns that have been an issue by the industry related  
12 to several key elements in Attachment 4, the alternative  
13 QII procedure, and we will continue talking about those.  
14 And before we move forward, we have a question from staff,  
15 Gary Flamm.

16           MR. FLAMM: This is Gary Flamm, staff. One thing  
17 I wanted to make sure there's no misunderstanding between  
18 the insulation requirements and the lighting requirements  
19 for ICAT luminaires in Section 150K, it's the luminaire  
20 that must be ICAT, and a built-up box cannot be used in  
21 lieu of an ICAT-10, and I want to make sure there's no  
22 confusion between the different sections of the Standards  
23 on that.

24           MR. NESBITT: Yeah, I was talking in reference to  
25 a retrofit when I go back in, you know, something was put

1 in in the past and before it was airtight, IC rated,  
2 whether or not it would be IC rated or not, you know, it's  
3 a question of do I box it and go over it or replace it,  
4 and I've decided they're cheap and easy in order to  
5 replace and most of the time it's not worth goofing  
6 around.

7 MR. FLAMM: Historically, where we came from were  
8 fiber tab fold boxes went over a luminaire and we  
9 specifically said you can't use those, and I just wanted  
10 to make sure there wasn't a misunderstanding there.

11 MR. NESBITT: Yeah, actually on my retrofit job,  
12 recently, the General threw in a non-airtight IC rated box  
13 and I pointed to it and told the architect and it had to  
14 go.

15 Just a general comment. As I said about a week  
16 and a half ago, that we HERS Raters have been approving  
17 spray foam under QII before the closed cell was approved  
18 and, as well as the fact that open cell is not, so it's  
19 definitely a good thing that we can actually do it right  
20 because it's kind of created problems in the industry  
21 where either getting the rebate programs, you kind of have  
22 to obscure the fact that you're doing a system QII that's  
23 not technically allowed and also from the industry, I've  
24 actually been asked on the job to eliminate the QII  
25 project where they were planning to do closed - well,

1 actually, they were planning to do closed cell foam,  
2 originally, I think, wanted to go to open cell, wanted me  
3 to remove it for the permit submission, but it had already  
4 been submitted, and then also it gets kind of complicated  
5 with Energy Star; Energy Star requires QII thermal bypass  
6 checklists and people want to use like a national  
7 checklist that does not even apply, so it's real nice to  
8 eliminate such issues.

9           We currently have basically all the blown in blank  
10 bit products really do not qualify, they're not batts, nor  
11 are they cellulose with a binder, and of course JM Spider,  
12 which is a fiberglass with a binder, I'm not sure if any  
13 of the other fiberglass manufacturers have come up with a  
14 similar product, but we are doing those under QII even  
15 though technically they do not apply, so we need to be  
16 looking at what we need to do to bring those in the fold.

17           MR. WARE: Well, I'll respond to the last part of  
18 your comment regarding blown or sprayed light density  
19 glass material into walls. The current QII procedure  
20 allows those materials to be in under the QII procedures  
21 that are there for insulation material, non-foam product  
22 types. Loose fill is called out, it's just the language  
23 needs to be updated.

24           MR. NESBITT: Specifically, thinking of walls, so  
25 for walls, cellulose as it has to have a glue binder, so I

1 blow most of my -- I don't have the equipment set up to  
2 fill it with water and glue, so either behind the fabric  
3 blow in blanket or drill and fill, as well as fiberglass  
4 is also installed that way and certainly with cellulose,  
5 it's true, and I would probably say a jam Spider with a  
6 glue sprayed and open wall without a netting probably does  
7 not -- I'd have to go back and read, but....

8 MR. WARE: Again, I think moving forward with  
9 approval of this proposed alternative QII procedure simply  
10 related to open cell products. All the standard  
11 insulation materials that are used in the marketplace  
12 right now to fill cavities, that we're aware of, the  
13 standard insulation materials, not Aerogel, not ceramic  
14 material, the glass fiber insulation materials, batts for  
15 loose fill, cellulose insulation materials, and both open  
16 and closed cell material, currently have or shortly will  
17 have a QI procedure allowed for them.

18 MR. NESBITT: Materials, yes, not necessarily  
19 process. I mean, you install cellulose either like I say,  
20 behind a fabric to hold it, or you spray it with water and  
21 glue, and the QII, I think, specifically says in, I think,  
22 the Appendix, like in the Appendix lookup tables, it has a  
23 note saying cellulose has to have a glue binder, so I just  
24 -- I don't have a problem saying it meets the intent of  
25 the Code, even if it doesn't meet the letter of the Code,

1 it's far more important sometimes --

2 MR. WARE: George, give us a break.

3 MR. NESBITT: No, I know --

4 MR. WARE: No, the intent here is, you're right, I  
5 mean, you point out that that's inappropriate to say that  
6 cellulose only includes face products, please, we know,  
7 okay? And we hope that people like you are moving beyond  
8 that when you do QII. Okay?

9 Going forward, as I mentioned, [inaudible], it's  
10 on our high priority list to start working on all the QII  
11 procedures so that we can get that into the rulemaking  
12 activity and that everybody has a chance from representing  
13 all insulation manufacturers to provide critical comments  
14 to approve this.

15 MR. NESBITT: Yeah, and I just want to raise it so  
16 that hopefully that happens, just to make sure we're aware  
17 of what we may not be aware of.

18 MR. WARE: Okay. All right, we've taken a lot of  
19 questions, I don't know if you have any other questions or  
20 comments. We'd really like any last written comments,  
21 email, or conversation is fine, by August 5<sup>th</sup>. Our intent  
22 is to work with the industry and respond to the comments  
23 and suggestions that we've had today, to the best of our  
24 ability. Some of those were not finalized at all. But  
25 our intent is to have our recommended final compliance

1 option procedure that is the attachments, the alternative  
2 QII procedure, and the representative changes in the  
3 manual compliance forms, in the JA4 section, into the  
4 Commission for approval early September. So that means  
5 that staff is going to be working diligently, quite  
6 frankly, in the next two weeks to get all of those changes  
7 made and get all of our paperwork into the process  
8 combines here at the Commission so we can beat that  
9 Commission deadline.

10           And the reason that Commission -- we say early  
11 September is there is a number of steps beyond the steps  
12 that are necessary to get to the workshop, that are  
13 overlaid on staff to get on a business meeting for  
14 approval. So this is still a leap to make September, but  
15 we're going to be scrambling and that's what we hope to  
16 achieve. Any other comments? We have another one.

17           MR. YASNY: If we can collect your business cards  
18 or name before you do leave, if you haven't done it  
19 already that would be great. Thanks.

20           MR. VARVAI: Yeah, Dave, I'm Dan Varvais with  
21 Bayer Material Science. My question, first I want to  
22 thank the staff for all the work they've done over the  
23 last couple years in getting us to this point where we are  
24 today. I had the pleasure of attending the Cal Green  
25 Training last Thursday in Sacramento and we're running

1 across situations where Title 24 is no longer, you know, a  
2 ceiling line, now it's become a baseline, a threshold,  
3 where now I've got Title 24, but I have to be 15 percent  
4 better, or if I am following this other Green Building  
5 Code, I have to be 30 percent better, or even 50 percent  
6 better. My point is, going back to the 2' X 6' fill in  
7 the cavity again, if it's Code, if staff decides to keep  
8 that condition that you have to fill the Code, we've  
9 already gone through and explained the cost ramifications  
10 and the different aspects that would make that decision  
11 -- it would price us out of the marketplace. But I think,  
12 further, what you need to keep in mind is when an  
13 architect or a building designer may have the strategy for  
14 going above and beyond traditional art value requirements  
15 with this product, you should keep the Cal Green part in  
16 mind. Do you see what I'm trying to say? That if they  
17 say, "Well, Title 24 says you have to fill the cavity,"  
18 instead of, "You can achieve additional R-Value  
19 requirements, you can achieve additional energy efficiency  
20 by filling the cavity," so let the architect and the  
21 designer and the energy designer have that choice. I  
22 think you'll take that compliance option out of their  
23 hands if you force to fill the cavity of 2' X 6'.

24           And just in general, our state has some real  
25 ambitious goals, and I know that with the comments -- I

1 think we've brought up some really good dialogue about air  
2 sealing, but again, where Title 24 now is the threshold,  
3 those are things that we should as a team start working on  
4 those things for 2013 right now. So, thank you.

5 MR. WARE: Good comments, Dan. Okay. Any other?

6 MR. MORRISON: Dave, I'd like to understand what  
7 the next steps are here. It looks like you're going to  
8 draw a deadline on August 5<sup>th</sup> for additional comments, and  
9 then, in August, revise the documents to be presented to  
10 the Commissioners in early September. Does it then become  
11 finalized by -- or describe what the steps that the  
12 Commissioners do, and then what happens, if you would.

13 MR. WARE: The documents that we submit to the  
14 Commission for Business Meeting potential approval would  
15 represent staff's final recommendation in response to the  
16 industry's compliance options request, so that would be  
17 the alternative QII procedure and any other related  
18 attachments that change the modifications in that ACM  
19 Manual, the reference appendices, and forms. Upon  
20 Commission approval, that day, we will then revise all  
21 those documents to take out the strikeouts, and change the  
22 forms as an example, those forms are generated both hard  
23 copy and electronically, and by definition, that day, that  
24 time, that new procedure can be used for compliance. But  
25 it will take some time for us to put a notice out to

1 building officials, attach [inaudible] and electronically  
2 provided on the website, and when we do that, we remove  
3 all of the strikeouts and underlining, but essentially  
4 that day, unless the Commission, as an example, sets a  
5 date.

6 MR. MORRISON: Is the Commission meeting a public  
7 meeting?

8 MR. WARE: Yes.

9 MR. MORRISON: So it would behoove us to be  
10 present for that?

11 MR. WARE: It would behoove you to be present for  
12 that, represent the industry, sure, we'd like to have --  
13 we tried to respond to the request as a partnership as  
14 opposed to necessary. I think we've come close to  
15 achieving that and if you're there, then that does say a  
16 lot about you. It's not necessary to have 10 people come  
17 up and say that we support this. We could put this on the  
18 Consent Calendar, as an example, but I think that, in  
19 courtesy to everyone who has attended and who finally  
20 attended remotely, we could put it on an agenda item for  
21 discussion, but often times these kinds of things go  
22 fairly quickly. That's what we'd love to see - get it  
23 done and get it out. And that's our objective. To that  
24 end, you know, you have our contact information, please  
25 utilize it if it's something new and different, in

1 particular, but we've taken copious notes and there still  
2 will be some discussion to industry and some key  
3 participants on some of the issues that were highlighted  
4 today as being important and our intent is to finalize  
5 those and get this thing put to bed and to the Commission  
6 for hopeful approval. We'd like to strike something off  
7 of our to-do list. Okay, thanks everyone for attending.

8 (Adjourned at 11:54 a.m.)

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**REPORTER'S CERTIFICATE**

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

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

IN WITNESS WHEREOF,

I have hereunto set my hand this 27th day of September, 2011.



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PETER PETTY  
CER\*\*D-493  
Notary Public