

U.S. DEPARTMENT OF ENERGY

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COMMERCIAL REFRIGERATION EQUIPMENT NOTICE OF
PROPOSED RULEMAKING PUBLIC MEETING ON TEST
PROCEDURES

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PUBLIC MEETING

+ + + + +

WEDNESDAY
DECEMBER 5, 2013

+ + + + +

The Public Meeting met in Room
8E-089, James Forrestal Building, 1000
Independence Avenue, S.W., Washington, D.C.,
at 9:00 a.m., Doug Brookman, Meeting
Facilitator, presiding.

PRESENT

- DOUG BROOKMAN, Meeting Facilitator,
Public Solutions, Inc.
- TIM ANDERSON, Hussmann Corporation
- ASHLEY ARMSTRONG, Department of Energy
- JEFF BAUMAN, National Refrigeration and
Air Conditioning Products, Inc.
- MARY DANE, Traulsen Refrigeration
- BRUCE HIERLMEIER, Zero Zone
- CHARLIE HON, True Manufacturing Company
- BYRON HORAK, Intertek
- STEVEN KING, Royston, LLC
- CHARLES LLENZA, Department of Energy
- MASSOUD NESHAN, Southern Store
Fixtures, Inc.
- JOE SANDERS, Traulsen Refrigeration

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RON SHEBIK, Hussmann Corporation (via
teleconference)
NICK SCHRINER, Arneg USA
LOUIS STARR, Northwest Energy
Efficiency Alliance
ANWAR SUHARNO, Royston, LLC
JENNIFER TIEDEMAN, Department of Energy
COLLIN WEBER, Navigant Consulting
SARAH WIDDER, Pacific Northwest
National Laboratory
LAUREN ZELINSKI, Air-Conditioning,
Heating, and Refrigeration
Institute

ALSO PRESENT:

LAURA BARHYDT, Department of Energy
GREGORY ROSENQUIST, Lawrence Berkeley
National Laboratory

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

2 9:01 a.m.

3 MR. BROOKMAN: Good morning,
4 everyone. Welcome. This is the U.S.
5 Department of Energy's public meeting on the
6 test procedure for commercial refrigeration
7 equipment.

8 Today is December 5, 2013 here in
9 the Forrestal Building in Washington, D.C.
10 My name's Doug Brookman from Public Solutions
11 in Baltimore. I'm glad to see you here this
12 morning.

13 We're going to start with
14 welcoming remarks from Ashley Armstrong.

15 MS. ARMSTRONG: So I'd just like
16 to welcome you. My name is Ashley Armstrong.

17 I oversee the development of all the test
18 procedures coming out of the Department as
19 well as some of our testing and compliance
20 efforts here.

21 We appreciate you guys all taking
22 the time to travel and we also appreciate

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1 those participating by webinar.

2 The purpose of today is really to
3 gain your feedback. So we encourage you to
4 ask a lot of questions, provide us your
5 opinions on things. It really will help us
6 get to a better answer in the end.

7 And we're looking forward to the
8 discussion. So thanks again.

9 MR. BROOKMAN: Thank you. Let's
10 do introductions; that's where we typically
11 start. Start to my immediate left, your name
12 and organization.

13 MR. ANDERSON: Tim Anderson,
14 Hussmann Corporation.

15 MR. HIERLMEIER: Bruce
16 Hierlmeier, Zero Zone.

17 MR. NESHAN: Massoud Neshan,
18 Southern Store Fixtures.

19 MR. HON: Charlie Hon, True
20 Manufacturing.

21 MS. DANE: Mary Dane, Traulsen.

22 MR. SCHRINER: Nick Schrinier,

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1 Arneg USA.

2 MS. ZELINSKI: Lauren Zelinski,
3 AHRI.

4 MR. HORAK: Byron Horak from
5 Intertek.

6 MR. BAUMAN: Jeff Bauman,
7 National Refrigeration.

8 MR. KING: Steven King, Royston
9 LLC.

10 MR. STARR: Louis Starr,
11 Northwest Energy Efficiency Alliance.

12 MS. TIEDEMAN: Jennifer Tiedeman,
13 DOE general counsel.

14 MS. ARMSTRONG: Ashley Armstrong,
15 DOE.

16 MS. WIDDER: Sarah Widder,
17 Pacific Northwest National Lab.

18 MR. WEBER: Collin Weber,
19 Navigant.

20 MR. ROSENQUIST: Greg Rosenquist,
21 Lawrence Berkeley National Laboratory.

22 MR. BROOKMAN: Okay, thanks to

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1 all of you. And again, welcome. Thanks for
2 being here so we can get an early start on
3 this day.

4 All of you received a packet of
5 information as you came in this morning and
6 I'm going to do a very brief agenda review.
7 Immediately following this agenda review
8 there is an opportunity for anybody that
9 wishes to do so to make brief opening
10 remarks, summary statements about issues that
11 matter to you at the outset here.

12 Following that we're going to
13 hear a rulemaking history and timeline, and
14 then proceeding immediately toward a
15 description of the test procedure scope and
16 definitions.

17 We'll take a break midmorning
18 round about 10:30 or so and then
19 clarifications to the test procedure. And
20 another break it has listed at noon-ish.
21 We'll see how that goes, see how far we are
22 along at that point.

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1 But then whenever we get there
2 other test procedure issues. And then again,
3 projected to end today around 1:15 or so.

4 As we get close to closing
5 another opportunity for anybody that wants to
6 make statements for the record, raise
7 additional issues, make sure your issues are
8 fully covered. So that's the plan.

9 I'd ask for your consideration if
10 you would please speak one at a time. Please
11 say your name each time you speak. Say your
12 name for the record and there will be a
13 complete transcript of this meeting. If you
14 could keep the focus here, put your cell
15 phones on silent mode and limit sidebar
16 conversations.

17 Be concise and share the air-
18 time. And I'll be queuing individuals by
19 name as best I can. I wish to encourage
20 follow-on comments. Sometimes the back and
21 forth is very useful to the Department as
22 they consider the merits of these arguments.

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1 For those of you that joined us
2 by the web, welcome. The Department of
3 Energy is trying hard to make these meetings
4 successful via the web. We hope the
5 transmission quality is good and is working
6 well for you.

7 Please keep your phones on mute
8 as you listen. And you can raise your hand
9 in the software program and our webmaster
10 will insert you in the conversation and
11 hopefully that will work.

12 And if not you can send your
13 questions or comments via the software and
14 she'll hand it to me and then I'll read it
15 into the record and we'll get that bit of
16 information into the conversation here.

17 So, I think that's all the
18 preliminary stuff. I see Charles Llenza is
19 at the microphone. And Charles Llenza for a
20 rulemaking history and timeline.

21 Oh pardon me, do opening remarks
22 first. I skipped a step. Let's do opening

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1 remarks first. Anybody that wants to make an
2 opening statement. No opening statements?
3 Okay. So I didn't skip a step. Charles
4 Llenza.

5 MR. LLENZA: Okay, I'm just going
6 to go over quickly on a little bit of a
7 format here.

8 Today's meeting is to present the
9 proposed test procedure for commercial
10 refrigeration equipment. It's actually
11 amendments to the actual test procedure
12 that's in place.

13 And we encourage the participants
14 to provide a summary of your comments in
15 written form if possible and provide that and
16 send that in through our -- to the docket and
17 through our email system.

18 This Notice of Proposed
19 Rulemaking comment period closes on January
20 13, 2014.

21 You will see these issue boxes as
22 we go through the presentation. These are

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1 particular questions that the Department is
2 interested in finding answers to and these
3 are -- we've highlighted some of these
4 questions in the presentation but a list of
5 the issues are in the NOPR document and
6 that's available at that link.

7 We also have a process or a
8 procedure on how to submit comments. Please
9 include the docket number and the RIN number.

10 And things should be sent to the
11 email on the slide. It could be sent via
12 postal or courier to Brenda Edwards and
13 that's the address. Again, January 13, 2014
14 is the end of the comment period.

15 Let me start with a little bit of
16 the rulemaking history. EPCA as amended
17 directs that the test procedure for
18 commercial refrigeration equipment determined
19 to be generally an industry testing procedure
20 and rating procedures developed or recognized
21 by ASHRAE or by ANSI. And here's the
22 reference to the ANSI standard.

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1 The initial test procedures for
2 self-contained refrigerator freezers and
3 equipment went into effect January 1, 2005.

4 EPCA also states that if ASHRAE
5 117 is amended, the Secretary must rule and
6 amend the DOE test procedures to ensure
7 consistency with the amended ASHRAE 117
8 standards unless certain findings are made
9 clear and convincing.

10 If a test procedure other than
11 ASHRAE 117 is approved by ANSI the Secretary
12 must review. And at least once every 7 years
13 DOE must conduct an evaluation of the test
14 procedure. This is by statute.

15 In the current CRE test
16 procedure, On December 2006 DOE established
17 a test procedure for commercial refrigeration
18 equipment using the commercial test procedure
19 from ARI Standard 1200-2006.

20 That standard also happens to
21 refer to the ASHRAE Standard 72-2005 as the
22 test method.

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1 DOE adopted AHAM Standard HRF-1-
2 2004 for measuring refrigerator compartment
3 volume. This is all part of the current test
4 procedure that was adopted by the Department.

5 On February 21, 2012 DOE issued a
6 test procedure final rule which amended the
7 first established test procedure. And that
8 test procedure updated references to the
9 industry's test procedures, incorporated a
10 method for evaluating the energy impacts and
11 allowed commercial refrigeration equipment
12 which cannot achieve the specific rating
13 temperature to instead be tested at the
14 lowest temperature at which it is able to
15 operate.

16 In today's proposed test
17 procedure revisions since the publication of
18 2012 test procedure DOE has received several
19 inquiries from interested parties.

20 So, this is a summary basically
21 of those, but not exclusive but a summary of
22 the highlights of these inquiries.

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1 The inquiries had to do with the
2 applicability for the DOE test procedure and
3 the current federal energy conservation
4 standard to various equipment and features,
5 the definition of certain terms, the proper
6 configuration of the use of certain
7 components and features, the proper
8 application of certain test procedure
9 provisions, and the compliance date for
10 certain provisions specific to the DOE test
11 procedure of 2012.

12 So the NOPR proposes a number of
13 test procedure revisions in response to these
14 inquiries. Some of them are listed but
15 there's others included in the actual NOPR.

16 During the summer of 2013 DOE
17 initiated a negotiated rulemaking process for
18 certification for commercial heating,
19 ventilation, air conditioning and
20 refrigeration and water heating equipment.

21 During these negotiations
22 discussions were held for the treatment of

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1 certain features of product attributes
2 specific to commercial refrigeration
3 equipment under the DOE test procedure.

4 There's been some consensus
5 reached regarding treatment of these features
6 and it was agreed that these clarifications
7 be codified in a future rulemaking which is
8 part of what we're trying to do with our
9 NOPR.

10 This test procedure NOPR contains
11 proposals reflecting these positions agreed
12 upon through the negotiated rulemaking. So
13 this was just adding a few other parameters
14 to this revision of the TP NOPR.

15 We'll use the regular TP NOPR
16 approval process which will be -- the already
17 published NOPR and the comment period.
18 Once that comment period will close, we will
19 go back and deliberate upon the comments and
20 come up with a final rule and that would then
21 be published at some future date.

22 And that's online and can be

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1 looked up at the link that's provided here on
2 this web page, on this slide.

3 A little bit of the timeline. We
4 published October 28. Today we are having
5 the TP NOPR public meeting. We're looking at
6 spring 2014 for a final rule and the proposed
7 final rule has an effective date 30 days
8 after publication. And that's what I have
9 for my part of the presentation.

10 MR. BROOKMAN: Okay. Questions
11 or comments before we proceed? Okay, I see
12 none. Sarah Widder?

13 MS. WIDDER: All right. Thank
14 you, Charlie and thanks, Doug.

15 As I said before my name's Sarah
16 Widder and right now we're going to go
17 through some slides that present a few
18 clarifications to DOE's test procedure scope
19 and particularly some definitions that will
20 help codify those clarifications of scope.

21 So first, this is the definition,
22 DOE's definition of commercial refrigeration

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1 equipment that we're all pretty familiar
2 with. So, a commercial product, not a
3 consumer product, designed and marketed for -
4 - not designed and marketed for medical,
5 scientific and research purposes, operates at
6 chilled or frozen temperatures, stores
7 merchandise horizontally, vertically, or
8 semi-vertically, has doors or no doors in a
9 variety of configurations, is designed for
10 pull-down temperature applications or holding
11 temperature applications and can be self-
12 contained or remote.

13 So, that is a very large or very
14 broad definition. And that covers a lot of
15 commercial refrigeration equipment that you
16 all manufacture or we all use, some of which
17 DOE has set standards for, but not all.

18 So, there's some types of
19 commercial refrigeration equipment that DOE
20 does not currently have standards for. And
21 this slide just clarifies that. CRE's test
22 procedure is applicable to some types --

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1 similarly, DOE's test procedure is applicable
2 to some types of commercial refrigeration
3 equipment and there are some types of
4 commercial refrigeration equipment that
5 cannot be tested using DOE's test procedure.

6 And those two things are not perfectly
7 aligned.

8 So, DOE's CRE test procedure is
9 applicable to all the equipment for which DOE
10 has established standards and in addition,
11 for example, this griddle stand you can see
12 in the slide can be tested using the DOE test
13 procedure and representations regarding the
14 energy composite of that equipment should be
15 made using the DOE test procedure, although
16 it's not covered by standards.

17 The equipment on the right, prep
18 tables and salad bar tables, buffet tables
19 that are also refrigerated and fall under the
20 scope of commercial refrigeration equipment
21 cannot be tested under DOE's current test
22 procedure and so they are not subject to the

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1 same requirements regarding representations
2 and are not subject to standards.

3 This is just a clarification of
4 the scope of CRE's standards. All three of
5 those types of equipment that were given as
6 examples before are not currently covered by
7 energy conservation standards.

8 And as we all know these
9 standards are listed at 10 CFR 431.66 and any
10 new standards for equipment would be added to
11 that section.

12 To clarify this scope, since
13 there are some types of commercial
14 refrigeration equipment with drawers that
15 could physically resemble chef bases or, you
16 know, more unique types of commercial
17 refrigeration equipment the DOE proposes to
18 differentiate this equipment by establishing
19 a specific definition for chef base or
20 griddle stand. That definition is listed
21 here.

22 Chef base or griddle stand means

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1 commercial refrigeration equipment that is
2 designed and marketed for the express purpose
3 of having a griddle or other cooking
4 equipment placed on top of it that is capable
5 of reaching temperatures hot enough to cook
6 food.

7 And with that we reach our first
8 request for comment. DOE is requesting
9 comment on this definition and how it applies
10 to the type of equipment DOE is wishing to
11 exclude from standards at this time.

12 MR. BROOKMAN: Is this a new
13 definition?

14 MS. WIDDER: This is a new
15 definition to be added to 10 CFR 431.62.

16 MR. BROOKMAN: Charlie?

17 MR. HON: Charlie Hon, True
18 Manufacturing. Question for you. Under the
19 same classification there are other units
20 which are not -- they're basically the same
21 as doored units but have drawers instead of
22 doors. Are they going to fall under a

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1 special classification as well?

2 MS. WIDDER: This definition is
3 just with regard to equipment that is
4 designed to be placed in extremely hot
5 environments under a griddle.

6 Those types of equipment that
7 have drawers and not doors, but are in other
8 ways similar to conventional commercial
9 refrigeration equipment will be addressed
10 later in the slides. But yes, we'll get to
11 that in a few slides.

12 MR. HON: Okay. Because the only
13 issue with these products is they have to
14 have a lot of capacity.

15 MS. WIDDER: Right.

16 MR. HON: Because of the heat
17 load on top of them.

18 MS. WIDDER: Right. Thank you.

19 MR. BROOKMAN: Thoughts on this
20 proposed definition? Massoud.

21 MR. NESHAN: Massoud Neshan,
22 Southern Store Fixtures.

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1 Could you go back to your slides
2 where you were showing cases that -- right
3 here. What is so difficult about testing or
4 using the DOE test procedure on the equipment
5 shown on the very right-hand side?

6 MS. WIDDER: Well, the issue with
7 the DOE test procedure and applying it to
8 this equipment is that it's not
9 representative of their use. So there's not
10 provisions in the test procedure to specify
11 whether these pans that contain the food and
12 the temporary door above them should be open
13 or closed or for how long, or what types of
14 test packages should be placed in those bins.

15
16 So it's just not specific enough
17 for this type of equipment and not
18 representative of their use in the field
19 which is what's required for a DOE test
20 procedure.

21 MR. NESHAN: Yes, but that
22 equipment in the middle, there's no temporary

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1 door opening, closing, or anything, just open
2 display. Isn't it?

3 MS. WIDDER: Well, but similarly
4 it has the same problem with pans. And the
5 DOE test procedure doesn't specify how test
6 packages should be placed in those pans, how
7 they should be filled, how they relate to
8 calculation of the refrigerated volume, for
9 example.

10 So the DOE test procedure would
11 describe the refrigerated volume behind these
12 doors that are on the lower part, but doesn't
13 describe whether or not the pans are included
14 in the refrigerated volume calculation. And
15 those types of specifics are important to get
16 right so that this equipment is rated
17 consistently among manufacturers and test
18 labs.

19 MR. BROOKMAN: Byron.

20 MR. HORAK: Are there plans to
21 specify the loads in the door openings for
22 this type of product in the near future?

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1 MR. BROOKMAN: Are you talking
2 about the middle one?

3 MR. HORAK: Both of those,
4 actually.

5 MS. WIDDER: Both of them.
6 They're not being considered in this
7 rulemaking.

8 MR. HORAK: Okay.

9 MR. HON: Charlie Hon, True
10 Manufacturing. There is an NSF test
11 procedure to verify these products but it is
12 still -- it would require additional add-ons
13 to that test procedure because it's run with
14 certain products, certain media samples, a
15 long list of information. But it is run
16 using the ASHRAE 72 test standards at the
17 pace of the product with additional add-ons.

18 MR. BROOKMAN: If I'm not
19 mistaken we still haven't received any
20 comment on this proposed definition. So I
21 guess no comment. How should we take that?
22 One or two individuals have just given me a

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1 thumbs up. I guess that's --

2 MS. WIDDER: Agreement.

3 MR. BROOKMAN: Massoud?

4 MR. NESHAN: Yes, Southern Store
5 Fixtures. You have in this one on what the
6 definition, it says that cooking equipment.
7 Why not warming equipment? Wouldn't the
8 warming equipment be part of it? Could it be
9 covered? It has to be only cooking?

10 MS. WIDDER: So, the DOE's
11 understanding of this type of equipment and
12 what makes it unique is the increased
13 refrigeration capacity that's required to
14 have cooking equipment that is extremely warm
15 on top of it, hot enough to cook food. So
16 that's how it's been defined here.

17 We welcome comment on whether or
18 not this definition would need to be expanded
19 to include warming comment, and if so, how it
20 could be expanded.

21 The key would be to differentiate
22 whether or not that type of commercial

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1 refrigeration equipment that is associated
2 with warming equipment is really in fact from
3 a technical design standpoint different than
4 the type of griddle stand, chef base and
5 griddle stand we're attempting to define
6 here.

7 MR. BROOKMAN: Is warming
8 equipment covered?

9 MS. WIDDER: Not under commercial
10 refrigeration equipment.

11 MR. BROOKMAN: Okay. Charlie.

12 MR. HON: Charlie Hon, True
13 Manufacturing. We have sold these types of
14 items to people who put a warming cabinet on
15 top of them, but we designed for the harsh
16 case because the vast majority of the product
17 is sold with either -- especially the chef's
18 base stand with usually fairly high
19 temperatures for cooking steak.

20 MS. WIDDER: Right.

21 MR. HON: And that's where the
22 majority of the market is. So if we sell

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1 anything else it would be the same type of
2 equipment.

3 MS. WIDDER: Thank you, Charlie.

4 MR. BROOKMAN: Okay, thanks. I
5 think we've covered that one, yes? Let's
6 move on.

7 MS. WIDDER: Okay, there we go.
8 So, this is just another clarification of how
9 DOE's test procedures and standards are
10 applied to equipment.

11 We're all familiar with the
12 definition of a basic model for commercial
13 refrigeration equipment and each basic model
14 of commercial refrigeration equipment, that's
15 the unit that is certified to DOE for
16 comparison and compliance with standards.
17 And it's rated and tested and subject to
18 those standards based on the equipment class
19 to which that basic model belongs.

20 And we've just received some
21 questions from -- some inquiries from
22 interested parties regarding the application

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1 of test procedures and standards to equipment
2 that are shipped with after-market doors for
3 equipment that's offered for sale from the
4 manufacturer with doors as an optional
5 accessory.

6 Regardless of how that unit is
7 shipped that unit must be tested and
8 certified as equivalent to a basic model
9 shipped with doors pre-installed, similar to
10 other optional accessories that affect energy
11 use.

12 Okay, moving on. This is just a
13 reminder of DOE's categorization of
14 commercial refrigeration equipment, how we
15 determine which equipment goes in which
16 class.

17 And we have a comment. I wonder
18 if I have a request for comment? Okay, let's
19 take it.

20 MR. BAUMAN: This is Jeff Bauman
21 from National. I apologize, if I can step
22 back a little bit, Sarah.

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1 MS. WIDDER: Yes.

2 MR. BAUMAN: When they say that
3 the equipment is offered for sale with doors
4 as an optional accessory, I'm just trying to
5 get clarification on that. Because you could
6 have -- two areas where I think that is some
7 manufacturers make open cases that do doors.
8 Some manufacturers make drawer units,
9 they're primarily sold with drawers, but you
10 can get doors on them.

11 MS. WIDDER: Yes.

12 MR. BAUMAN: So you would have to
13 test it. Can you just explain how that would
14 work with both? You'd have to list it with
15 doors as well as drawers?

16 MS. WIDDER: Yes. So, to the
17 extent -- Ashley can go ahead.

18 MR. BAUMAN: Okay, I think
19 there's a hole there, yes.

20 MS. ARMSTRONG: You picked the
21 one hole, you did. You got it.

22 So, slide 24 is meant to

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1 distinguish the difference between open and
2 closed. So, regardless of whether -- if you
3 ship the unit integrated with doors, or if
4 you ship them in a separate box as add-on
5 doors it's a closed unit. You need to
6 certify it, you need to test it, you need to
7 be compliant with the closed standards.

8 What she hasn't gotten to yet,
9 slide 26, the drawers, when she gets there --

10 MS. WIDDER: Yes, we'll get
11 there.

12 MS. ARMSTRONG: -- we're equating
13 drawers with doors. So it's like a singular
14 unit. You wouldn't necessarily do them both.

15 But she'll get there.

16 MS. WIDDER: Yes, we'll get
17 there.

18 MS. ARMSTRONG: Twenty-four is
19 open versus closed.

20 MR. BAUMAN: Okay, thanks for
21 clarification.

22 MS. ARMSTRONG: The Department is

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1 aware that some people are putting doors in a
2 separate box and saying, you know, these
3 aren't closed cases. And in the Department's
4 eyes those are closed cases.

5 MS. WIDDER: Okay, so that's a
6 pretty clear issue. If there's no other
7 comments we'll move onto clearly the most
8 interesting issue which has to do with
9 drawers versus doors.

10 So, DOE interprets the term
11 "door" to mean any movable component of the
12 commercial refrigeration unit that when
13 closed separates the interior refrigerated
14 space from the ambient air which is what
15 makes it closed, and when opened provides
16 access to the refrigerated product inside the
17 CRE unit which is the intention of the door.

18 By that definition DOE considers
19 drawers to be doors for the purposes of
20 compliance under DOE's regulatory program
21 since a drawer would also meet both of those
22 criteria. So compliance for equipment with

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1 drawers is determined based on the standard
2 level for the equipment class with doors as
3 tested in accordance with DOE test
4 procedures.

5 So, in answer, like Ashley said,
6 just reiterating a piece of equipment with
7 opaque doors or opaque drawers would be in
8 the same equipment class and subject to the
9 same standard.

10 If it was a clear door versus
11 opaque drawers those equipment would be
12 different because it would be transparent
13 versus closed cases.

14 MR. BROOKMAN: Massoud?

15 MR. NESHAN: Yes, Neshan with
16 Southern Store Fixtures.

17 Based on this definition the
18 night curtain, it becomes a door then.
19 Because any moving component is considered to
20 be a door. And meets the definition of
21 separating the refrigerated area from the
22 outside and all that.

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1 MS. WIDDER: Yes.

2 MR. NESHAN: The night curtain
3 becomes a door which is not accurate.

4 MS. WIDDER: Well, and clearly
5 not the intent. It is -- definitely DOE's
6 intent is a permanently affixed movable
7 component.

8 And that's a good comment,
9 Massoud. We'll take that under
10 consideration.

11 MR. HON: Unfortunately there are
12 a lot -- Charlie Hon -- there are a lot of
13 night curtains that are permanently affixed,
14 factory-installed.

15 MS. ARMSTRONG: So we should say
16 excluding night curtains and that would do
17 it, right?

18 MR. BROOKMAN: Are night curtains
19 enough of a distinctive descriptor?

20 MS. WIDDER: They're defined in
21 our regulations.

22 MR. BROOKMAN: Okay.

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1 MR. HON: I think it would be
2 very clear then.

3 MR. BROOKMAN: Okay, great.
4 Thank you. That was productive.

5 MS. WIDDER: Yes, great.

6 MR. BROOKMAN: Additional
7 comments here before we move on?

8 MS. WIDDER: We have a request
9 for comment on the next slide so can I just
10 get there?

11 MR. BROOKMAN: Please do.

12 MS. WIDDER: All right, great.
13 So, this is just -- DOE recognizes that
14 probably some of this confusion came from the
15 fact that "door" is not defined in our
16 current regulations.

17 And so, to clarify, DOE is
18 proposing to establish this definition of
19 "door" in 10 CFR 431.62. "Door" means a
20 movable panel that separates the interior
21 volume of a unit of commercial refrigeration
22 equipment from the ambient environment, is

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1 designed to facilitate access to the
2 refrigerated space for the purposes of
3 loading and unloading product, and is affixed
4 such that it is not removable without the use
5 of tools. This includes hinged doors,
6 sliding doors and drawers.

7 And as we just discussed on the
8 previous slide we may add an explicit
9 exclusion of night curtains.

10 MR. BROOKMAN: Okay. One way or
11 the other.

12 MS. WIDDER: So we do, we request
13 comment on this proposed definition, and in
14 particular, specifications that the term is
15 inclusive of drawers.

16 MR. BROOKMAN: So, comments on
17 this definition. No additional comments.

18 MS. WIDDER: Okay.

19 MR. BROOKMAN: Massoud.

20 MR. NESHAN: Yes, Neshan. One
21 point of clarification.

22 MS. WIDDER: Sure.

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1 MR. NESHAN: A door means a
2 movable panel part that meets all those three
3 definitions?

4 MS. WIDDER: Correct.

5 MR. NESHAN: So if it only meets
6 two of them it's not considered a door then,
7 right?

8 MS. WIDDER: Correct.

9 MR. NESHAN: Okay, good. Thank
10 you.

11 MR. BROOKMAN: Louis.

12 MR. STARR: Just a question.
13 Just kind of following up on what he said.
14 So, if the drawer comes out it's not fixed
15 then. Does that mean it's not a door
16 anymore?

17 MS. WIDDER: Right. Well, that's
18 a very good comment. That will be something
19 we have to consider in establishing a final
20 definition.

21 MR. HON: Charlie Hon. A lot of
22 doors -- this is a very bad definition

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1 because a lot of doors are lift-off. You
2 open the door, lift it off and take it off to
3 clean it. They just were built so they just
4 literally lift up.

5 MS. WIDDER: So perhaps instead
6 of number 3 we just establish the exclusion
7 of night curtains and don't talk about how
8 it's affixed.

9 MR. HON: That's a bit of a
10 loaded gun.

11 MS. WIDDER: All right. Thank
12 you for that.

13 MR. BROOKMAN: Thank you,
14 Charlie. Okay. Additional comments on the
15 definition? Charlie?

16 MR. HON: Charlie Hon. There's
17 also some issues there because number 3 is so
18 ambiguous because sliding doors slide out and
19 can be removed the same way. So there would
20 be a major ambiguity there as well.

21 MS. WIDDER: Right.

22 MR. HON: Drawers are the same

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1 way. So number 3 is a disaster in every
2 aspect.

3 MS. WIDDER: All right.

4 (Laughter)

5 MS. WIDDER: We appreciate your
6 comments.

7 MR. HON: I could use every one
8 of those to my advantage because every one of
9 them would take them out of classification.

10 MS. WIDDER: Okay.

11 MR. HON: Because hinged doors
12 can be lifted off, sliding doors, you just
13 lift it up and pull them out, maintain your
14 draw cord, and drawers quite often have a
15 quick release pin and away you go.

16 MS. WIDDER: So, if we ignore
17 number 3 --

18 MR. HON: Number 3, every one of
19 the categories would get you trouble.

20 MS. WIDDER: Okay. So, but if we
21 ignore number 3 and we pretend that that's
22 not part of the definition, but would number

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1 1 and number 2 with the explicit exclusion of
2 night curtains added be a sufficient
3 definition? Or would you also find issue
4 with that definition?

5 MS. ARMSTRONG: Well, the other
6 option is to not have a definition at all.

7 And so we did it for a reason.
8 We felt there was a need for one and we were
9 filling the need. But it sounds like it may
10 be also causing more harm than good. We
11 could leave it ambiguous and then it would be
12 DOE's discretion.

13 MR. HON: This is Charlie Hon
14 again. The first sentence in number 3 is the
15 problem. Affixed such that it is not
16 removable without the use of tools, that's
17 the problem. Because all those -- there are
18 samples of every one of those that have
19 releases on them or something where you don't
20 need a tool other than your index finger to
21 remove them. That's where the problem comes
22 in. They all would fit the standard and

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1 should fit the standard as a hinged door, a
2 sliding door, or drawers. But the use of
3 tools is a problem.

4 MS. ARMSTRONG: Okay. So, when
5 you go to write your comments I think we have
6 all heard that number 3 should just be
7 scrapped altogether regardless of whether we
8 decide to -- if we decide to ultimately adopt
9 a definition.

10 But when you go to write your
11 comments, if you do end up writing additional
12 comments, if you could think about the idea,
13 the premise here is that we were trying to
14 make clear that a door in DOE's reg is not
15 just, you know, it's a hinged door, it's a
16 sliding door, it is drawers. It is all these
17 things. It's not just, you know. So, is
18 there a better way to do this? So I ask for
19 your feedback on that. Okay?

20 MR. BROOKMAN: Okay. We have a
21 comment via the web from Joe Sanders, or a
22 question, in fact. How does it affect the

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1 cabinet volume calculation versus drawers?
2 And I think we're getting into this later.
3 Ashley?

4 MS. ARMSTRONG: We're going to
5 get into the TDA calculation later.

6 MR. BROOKMAN: Yes. So Joe, hang
7 on with that question and we'll try and
8 address that. Jeff?

9 MR. BAUMAN: I'll just say that
10 will be volume calculation not TDA --

11 MS. WIDDER: Right.

12 MR. BAUMAN: If it's not a glass
13 -- unless you have a glass drawer somewhere.

14 MS. WIDDER: Right. And I think
15 that the clarification there is that the
16 volume calculation for a drawered unit and a
17 doored unit would be the same.

18 MR. BAUMAN: And I -- I only
19 speak for Jeff but I think there would be
20 questions about with a drawer unit you have
21 I'll say fixed components inside which in
22 some of the ways volume are calculated there

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1 may be considerations of not considering
2 those part of the volume of the cabinet of a
3 drawer unit.

4 MS. WIDDER: And Joe or anyone
5 else is of course welcome to submit comments
6 on that.

7 MS. ARMSTRONG: So, I'm not as
8 familiar with how you would actually -- I've
9 never tried to take the volume calculation of
10 a drawered unit. But I've done it for -- my
11 understanding is it's similar to residential
12 and I've done it plenty of times for
13 residential and there are plenty of -- in the
14 HRF document it pretty much will take care of
15 it. At least that's my understanding. You
16 don't believe it will? Okay, so then we need
17 to deal with it.

18 MR. BAUMAN: I'm not familiar but
19 I think there would be considerations too for
20 pan capacity. I would think of it as a good
21 way to do that would be considering pan
22 capacity of the unit and how much can you put

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1 in the drawers.

2 You know, you might have a
3 different numbers you're using for what the
4 allowable energy is and such, but if you talk
5 about the volume of a refrigerator is
6 supposed to be how much can the refrigerator
7 hold.

8 If you're talking about a drawer
9 unit it's how much product can you put in
10 that. How much product space do you have.
11 I'm not saying -- we'll cover that in our
12 comments or whatever. You don't need to
13 answer now. But I'm just saying those are
14 the types of things that may be.

15 MS. ARMSTRONG: Yes, I mean when
16 you cover in your comments I ask -- if you're
17 talking about how much the drawer can hold, I
18 mean my distinction is going to -- what's the
19 difference between how much a drawer can hold
20 and what the refrigerated space is? Is there
21 a difference?

22 MR. BAUMAN: Yes. Yes and we'll

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1 cover --

2 MS. ARMSTRONG: And what should
3 be accounted for. And so that's where -- I
4 mean, you know.

5 MR. BAUMAN: Now, my actual
6 comment was agreeing with Ashley. Surprise.

7 (Laughter)

8 MR. BAUMAN: I actually, I think
9 the idea, and I don't know what this would do
10 to your having to modify your documents, but
11 I think -- I want to think I understand why
12 you're covering doors as hinged doors,
13 sliding doors and drawers, but I think to a
14 layman or even anybody reading it, you read
15 doors, you're thinking doors. Versus going
16 into where the standards say doors and saying
17 doors are drawers.

18 You know, I think you can cover -
19 - you can say doors cover hinged doors and
20 sliding doors. I think saying a drawer is a
21 door is not intuitive and would be more
22 confusing for people who aren't necessarily

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1 reading through the 350 pages of definitions
2 and things.

3 MS. WIDDER: Right. In response
4 to that a little bit. And Charlie, this
5 might be what you were going to say.

6 It's difficult for the Department
7 of Energy to change the referenced test
8 procedure which is ASHRAE 72-2005 unless we
9 were to incorporate all the relevant
10 provisions into the CFR directly, to change
11 every instance of door to door plus drawer,
12 or door and drawer.

13 However, there's a draft, a
14 proposed draft of ASHRAE 72-2000 -- maybe
15 it'll be 14 by the time it's done -- that
16 does just that.

17 MR. BROOKMAN: Okay. Additional
18 comments here? Okay.

19 MS. WIDDER: Okay. Related to
20 closed refrigerators, doors and drawers, DOE
21 also in reviewing the definitions of
22 application of the test procedure realized

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1 that there's not a clear differentiation or
2 definition for differentiating closed cases
3 from -- or closed solid cases from closed
4 transparent cases and determining
5 transparency of a door or material.

6 Much of this currently seems up
7 to the manufacturer. There's been some
8 recent AHRI interpretations related to
9 determining transparency. And also in
10 Appendix D there's a small definition of
11 transparency that references greater than 65
12 percent light transmittance.

13 And that's currently part of the
14 DOE test procedure. However, it's not
15 explicitly codified. So, to clarify the test
16 procedure DOE prefers a quantifiable method
17 for determining light transmittance which is
18 currently not established in the DOE test
19 procedure or any of its reference documents.

20 DOE proposes to use an ASTM
21 method for determining the -- a test method
22 for determining solar transmittance of sheet

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1 materials using sunlight.

2 This is typically applied to
3 fenestration products but in reviewing the
4 document DOE finds that the most broadly
5 applicable document to determining light
6 transmittance through intended-to-be-
7 transparent materials, it's the basis for
8 other industry standard test methods that are
9 applied to fenestration products typically.

10 To incorporate this into the CFR
11 DOE is proposing a definition of
12 "transparent" as follows. "Transparent"
13 means greater than or equal to 65 percent
14 light transmittance as determined in
15 accordance with ASTM Standard E1084-86(2009).

16
17 And the definition of the
18 standard at normal incidence which is
19 directly perpendicular to the door. And a
20 lot of people might be thinking now do we
21 have to apply this definition to every door
22 that we sell and the answer is no.

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1 This definition will be applied
2 to determine transparency when there may be
3 an issue. For example, if the Department
4 were to test a case and wanted to determine
5 whether or not a door was transparent because
6 there was some ambiguity, or if there was
7 some coverings of opaque material this test
8 procedure could be applied to determine
9 transparent material from opaque material.

10 But it is not -- equipment is not
11 required to be tested to this standard in
12 order to be incorporated into a piece of
13 commercial refrigeration equipment. It's
14 basically like a tiebreaker. And Ashley
15 might have something to add to that.

16 MS. ARMSTRONG: I don't.

17 MS. WIDDER: Okay.

18 MR. BAUMAN: Well, this is Jeff
19 Bauman from National. Will that be -- what
20 you just said, Sarah, will that be included
21 in the documentation or whatever with the
22 definition that you won't have to test -- do

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1 a test and clarify this? It will only be --

2 MS. ARMSTRONG: I've got it. So,
3 that's the reason for putting it in the
4 definition. You have fair warning how we
5 will determine if there's an issue with
6 whether or not something is transparent or
7 not.

8 If you want to use it, you may,
9 but it's not required as part of the test
10 procedure. Right? But yes.

11 MR. BAUMAN: Understood. And I
12 understand that now because I'm sitting
13 across the table and see the smiling face and
14 explanations that I appreciate. But if
15 you're going back to the final NOPR or the
16 final notice, will that be --

17 MS. ARMSTRONG: I'll hand you the
18 transcript and you can hand it back to me if
19 I ever tell you something different.

20 MR. BAUMAN: Okay.

21 MS. ARMSTRONG: And we'll -- I
22 mean, we'll -- I don't know that we'll

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1 clarify it --

2 MR. BAUMAN: I'm not worried for
3 myself, for other people that are referenced.

4 MS. ARMSTRONG: Yes. I don't
5 know how we'll clarify it, but we'll try to
6 make that as clear as possible.

7 MS. WIDDER: Well, and if you
8 also look at the reg text that -- if you're
9 going to submit written comments, if you just
10 look at the regulatory text that's at the
11 back of the NOPR document there's -- the
12 definition is established there.

13 And if you had recommendations
14 about incorporating that, or language that
15 could be incorporated to indicate its -- the
16 optional nature of the requirement we would
17 welcome those comments.

18 MR. HON: Charlie Hon, True
19 Manufacturing. I have some real serious
20 questions about this because you effectively,
21 if it's below 65 percent light transmittance
22 therefore it becomes a solid door. Thereby

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1 requiring less energy -- changes the energy
2 allowance a great deal.

3 The majority of the losses
4 through transparent doors are because of the
5 difference in insulation capacities on a
6 glass door versus a solid door. There's not
7 the fenestration issues that are that severe
8 unless you happen to put it right in direct
9 sunlight.

10 So this could be a real stickler
11 because if we're trying to do what we do
12 which is save energy we're starting to put
13 tinting into glass. And if we get too much
14 tint on a piece of glass theoretically we
15 could discover that we had 64 percent at a
16 light transmittance at a certain -- I am
17 assuming this is a fairly broad spectral
18 range.

19 But if we drop to 64 percent
20 light transmittance it suddenly falls under
21 solid door which is more stringent. I'm not
22 sure this is a very good idea at 65 percent.

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1 MS. ARMSTRONG: So I think you
2 understand the intent. Is there a better
3 way?

4 You know, I think what we were
5 trying to do is saying how do you determine
6 if something is transparent or not. And this
7 is one way, a definitive way, one could argue
8 not a descriptive way. I mean it is a test.
9 You can tell one way or the other.

10 But I get your point, especially
11 with the standards rule going on.

12 MR. HON: Right. This is Charlie
13 Hon again. Sixty-five percent may be the
14 number that I'm concerned about.

15 Because we run some pretty dark
16 shading into some wine cooling type designs.

17 And it may not be 65 percent transmittance,
18 but it's still performing as a glass door.
19 The objective is to see through it.

20 And it may be that we may want to
21 -- I'm going to go back and do some testing
22 to see if that 65 percent number is

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1 realistic. Or it may need to be 45 or 50
2 percent. But I think that 50 may be a number
3 that's workable.

4 MR. BROOKMAN: Okay, thank you.
5 Massoud?

6 MR. NESHAN: Neshan, Southern
7 Store Fixtures. I also have an issue with
8 this. When you have a self-serve counter
9 display case a lot of times you put a mirror
10 finish one way, or see-through mirror finish
11 sliding doors in the back. That cuts down on
12 the obviously how transparent the glass is.
13 That's by the customer of course. How would
14 that be treated?

15 MR. BROOKMAN: In the back of the
16 cabinet?

17 MR. NESHAN: In the back of the
18 cabinet, correct. I mean, all of a sudden
19 you end up with a solid door in the back?
20 That's --

21 MS. WIDDER: I don't -- oh, so
22 there's glass on the back of the cabinet but

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1 it's mirrored?

2 MR. NESHAN: One-way, yes. You
3 can see from the back but not, you know,
4 there is coating on --

5 MS. WIDDER: So, yes. This would
6 be normal incidence from the exterior of the
7 case. We'll have to clarify that. So if
8 you're able to see through the glass and it
9 meets the criteria in the direction, the
10 intended direction of viewing, we'll have to
11 work on that definition. So if you have
12 suggestions please help. Or please submit
13 them.

14 But in the intended direction of
15 viewing if it meets the definition I think
16 that would be the intent. If it's not
17 optically transparent from both directions
18 that it would still be glass. Transparent.

19 MR. WEBER: Collin Weber from
20 Navigant. Just to pile onto that. I don't
21 think the service over counter definition as
22 it was proposed or as it was included in the

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1 act last fall specifies a solid or
2 transparent door at any point so I don't
3 think there would be a conflict.

4 MR. NESHAN: Neshan again. It
5 may not be included. However, when you're
6 looking at a door, I mean based on the
7 definition you have -- that case has doors on
8 it. When we are calculating the TDA, the
9 clear glass on the back falls as part of TDA.

10 If it's not all of a sudden transparent
11 anymore impacts it overall TDA and that's
12 what the point is.

13 MR. HON: Charlie Hon. There are
14 units in the industry which are not service
15 over counter at all. They're just pass-
16 through units, double-doored, or they -- the
17 service people behind the unit can see what's
18 in the unit. And they have a glass
19 reflective panel on it which is kind of in
20 the flower cases.

21 MR. BROOKMAN: Okay. Very
22 helpful, very constructive additional

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1 comments here before we move on. So do write
2 really descriptive comments here to help the
3 Department.

4 MS. WIDDER: Thank you.

5 MR. BROOKMAN: Thank you.

6 MS. WIDDER: Similarly to this
7 definition of "transparent" DOE determined
8 that there are not clear definitions in the
9 CFR to apply that definition of -- that
10 proposed definition of "transparent" to
11 closed solid cases and closed transparent
12 cases, or cases with solid doors versus
13 transparent doors.

14 DOE determined to define these
15 terms with respect to the equipment families
16 that DOE uses to apply standards which is the
17 closed solid and closed transparent
18 terminology.

19 And to clarify this, DOE proposes
20 to establish these two new definitions in the
21 CFR, closed solid and closed transparent, as
22 follows. Closed solid means equipment with

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1 doors and in which more than 25 percent of
2 the outer service area of all doors on a unit
3 is not transparent, applying the proposed
4 definition of "transparent" that we just saw.

5
6 Closed transparent means
7 equipment with doors and in which 75 percent
8 or more of the outer service area of all
9 doors on a unit is transparent.

10 MR. HON: Charlie Hon. My
11 concern on these definitions is specifically
12 there's a series of units that are out there.

13 Number 1 is that they're pass-through units.

14 Quite often solid doored on one, glass
15 doored on the other.

16 Yet technically the glass doors
17 on the front may only have some trim around
18 them which technically drops them below 50
19 percent that way because the solid doors on
20 the back and the partial solidness of the
21 front doors would drop you below 50 percent.

22 And pass-through units are notoriously bad

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1 because you still have heat loss, the
2 additional door gaskets and things like that.

3 But then you would immediately turn all
4 those into solid units which is additional
5 requirements on loading.

6 So, I would suggest that it would
7 not say all units. It would say -- if you're
8 going to do the 75 percent rule which
9 unfortunately there is -- I'll get into the
10 second argument in a second, but I would say
11 whatever percentage we end up with on all
12 units on one side of the unit.

13 Because pass-through units are
14 usually never glass in glass. That just
15 doesn't happen. But yet they're still every
16 bit as transparent and the heat loss issues
17 exist off the glass doors as they do off the
18 others.

19 You also have a second set of
20 issues on half doors quite often which is the
21 top half of a set of doors is glass and the
22 bottom half is solid. And those can be

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1 problematic if we start classifying
2 everything into 75 or more glass rather than
3 50 percent.

4

5 MS. WIDDER: So, just to clarify,
6 you think 50 percent would be a better number
7 here?

8 MR. HON: It depends on what --
9 number 1 is 50 percent on pass-through units
10 is -- even 50 percent you probably have to
11 drop to 45 because your technical definition
12 was the frame around the door making it not -
13 - you're actually losing part of it. So
14 about 45 percent on pass-throughs. And if
15 you have half and half doors, half glass,
16 half solid, how do you define that? That's
17 open for the Department to figure out what
18 they want to do there. Because there's ratio
19 differences there.

20 MS. WIDDER: Right. So the one
21 issue that -- and I understand the difference
22 in stringency of standards. But I would also

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1 encourage everyone here and those on the
2 webinar to think about in submission of their
3 comments is the application of the standards.

4 So for those cases you're
5 describing, Charlie, their standard is still
6 based on total display area. And as that
7 total display area, for example, is 45
8 percent of the doors that's also going to
9 have an impact on the standard they have to
10 meet.

11 MR. HON: You have a problem
12 there because if you're talking self-
13 contained equipment it has nothing to do with
14 total display area. It's all internal
15 volume.

16 MS. WIDDER: For self-contained.
17 Yes.

18 MR. BAUMAN: This is Jeff Bauman
19 from National. Agree with Charlie on both
20 points. And again, as we're designing, if
21 you're designing like Charlie's example the
22 door that's got -- I'll say most units,

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1 probably 50/50 is the cutoff when you design
2 or you'll upsize the refrigeration system
3 with the -- type of the system. You're
4 reflecting where you would design that
5 product at, if it's got glass doors in the
6 front or solid on the back, where a lot of
7 units if it's got a glass on one door, the
8 right's glass and the other's left, about
9 that 50 percent is where you're going to cut
10 off and say you need to upsize that unit if
11 it needs to be done. So I think 50/50,
12 somewhere in there.

13 Going on with that I think
14 Charlie's point about the percent, the way
15 the definition is with the surface area of
16 the door. I don't know what better
17 definition would be and I'd think about that.

18
19 But it's somewhere where you can
20 account for 50 percent of the doors excluding
21 the frame because one guy could have a wider
22 frame. Then you get into what your area and

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1 what the definition of a glass door versus a
2 solid door is. And it may be better to go in
3 that direction rather than talking about the
4 specific area of the door, 50 percent of the
5 doors are -- 50 percent of the area of doors
6 are glass or solid. So, I'll think about
7 that.

8 But I think trying to get away
9 from considering the border of the door non-
10 transparent which the way this is written it
11 would needs to be done. And I agree again
12 that a 50/50 split, somewhere in that area,
13 would be more applicable with how products
14 are designed.

15 MR. BROOKMAN: Okay, thank you.
16 Additional comments here? Charlie?

17 MR. HON: Charlie Hon. One thing
18 we may want to add into the definition, let
19 the Department just look at it is there is a
20 difference between the size of a door and the
21 size of a door opening.

22 A door opening is usually much

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1 smaller than the door itself because you have
2 your gasket material and everything else
3 around it to keep it. So we may want to look
4 at that very carefully and possibly consider
5 ratio using the door opening size rather than
6 the door frame size. Because the front
7 surface of the door could be very, very large
8 with a 3- or 4-inch frame around it for
9 support reasons. But it really doesn't do
10 you any good because the door opening on the
11 actual case itself may be substantially
12 smaller.

13 MR. BROOKMAN: Okay.

14 MS. WIDDER: Thank you for those
15 comments.

16 MR. BROOKMAN: Anything else
17 here? Nothing additional.

18 MS. WIDDER: Okay. This is sort
19 of changing gears a little bit from the
20 closed transparent versus solid definitions.

21 But another area that the
22 Department believes needs clarification in

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1 their definitions and scope of commercial
2 refrigeration equipment is the application of
3 standards for hybrid equipment versus non-
4 hybrid commercial refrigerator-freezers.

5 DOE's regulations obviously
6 currently cover commercial hybrid
7 refrigerators, freezers and refrigerator-
8 freezers and non-hybrid commercial
9 refrigerators, freezers and refrigerator-
10 freezers.

11 There appears to be some
12 confusion regarding the differentiation of
13 hybrid from non-hybrid equipment. And to
14 clarify this the Department is proposing
15 changing the definition of commercial hybrid
16 refrigerator, freezer, refrigerator-freezer
17 which is currently defined at 10 CFR 431.62
18 and breaking it into two definitions, a
19 commercial hybrid definition to just specify
20 what is commercial equipment and then
21 explicitly defining refrigerator, freezer and
22 refrigerator-freezer. And I've got a slide

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1 that sort of clarifies all this.

2 First we're going to talk about
3 the definitions and then there will be a
4 slide that sort of hopefully helps out all
5 these confused looks in the room.

6 So, the definitions that the
7 Department is proposing in addition to
8 removing the current definition of commercial
9 hybrid refrigerator, freezer or refrigerator-
10 freezer are "commercial hybrid" means a unit
11 of commercial refrigeration equipment
12 consisting of two or more refrigerated
13 compartments that are in two or more
14 different equipment families as defined at 10
15 CFR 431.66 which is where all those
16 standards, the standard table is, and which
17 is sold as a single unit. So that would be
18 two compartments in the same piece of CRE
19 that are from different equipment families.

20 A commercial refrigerator-freezer
21 non-hybrid is a unit of commercial
22 refrigeration equipment consisting of two or

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1 more refrigerated compartments where at least
2 one refrigerated component is capable of
3 operating at or above 32 degrees Fahrenheit,
4 meaning meeting the definition of
5 refrigerator, and another component is
6 capable of operating below 32 degrees
7 Fahrenheit, meeting the definition of
8 freezer.

9 So, to bring all these together
10 we've got examples. On the very left-hand
11 side we have a commercial refrigerator-
12 freezer that meets the new definition of
13 commercial refrigerator-freezer that the
14 Department is proposing.

15 You can see it's one unit. It
16 has two transparent doors so it's in the same
17 equipment family, vertical closed
18 transparent. One component is at zero
19 degrees Fahrenheit and one is at 38 degrees
20 Fahrenheit. Or it could be slightly
21 different temperatures but one meets the
22 freezer temperature range and one meets the

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1 refrigerator temperature range. But it does
2 not meet the hybrid definition because
3 they're both vertical closed transparent.

4 Commercial hybrid refrigerator is
5 a unit where both of the components are the
6 same temperature class, but are in different
7 equipment families. So in this example the
8 one on the left is glass. It's a vertical
9 closed transparent refrigerator.

10 And the one on the right that's
11 blue is -- a different color blue is meant to
12 indicate a solid door. It's vertical closed
13 solid in this example. So two equipment
14 families, vertical closed transparent and
15 vertical closed solid, but the same
16 temperature classes. So that would meet the
17 definition of commercial hybrid refrigerator,
18 meeting the commercial hybrid definition and
19 the refrigerator definition, but not the
20 commercial refrigerator-freezer definition.

21 And on the right-hand side now we
22 meet both commercial hybrid and commercial

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1 refrigerator-freezer definitions. We have
2 two different components. One which has a
3 glass door and is at zero degrees Fahrenheit
4 meets freezer definition, and one has a solid
5 door, vertical closed solid, and is at the
6 refrigerator temperature. So it meets both
7 the definition of commercial refrigerator-
8 freezer and commercial hybrid.

9 And hopefully that clears things
10 up a little bit. We're going to establish
11 all these definitions in the CFR and DOE
12 requests comment on the clarity and
13 sufficiency of these definitions for
14 commercial hybrid and commercial
15 refrigerator-freezer.

16 MR. HON: Charlie Hon, True
17 Manufacturing. Your definition of a model
18 with two components, middle section there,
19 two components greater than 32 degrees.
20 Looks like one has a solid door, one has a
21 glass door. How do you define two
22 components?

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1 MS. WIDDER: They would be -- the
2 two refrigerated spaces would be physically
3 separated. Not necessarily thermally
4 isolated, but physically separated. So
5 they're -- where there's a black line there
6 would be a solid wall separating the
7 refrigerated compartments. Perhaps that's
8 not common.

9 MR. HON: Charlie Hon. More
10 common is -- this is an unusual circumstance.

11 I'm still confused by this because why can't
12 -- there's also no discussion up there of
13 freezer-freezer.

14 MS. WIDDER: Well, freezer-
15 freezer would apply same as this center
16 column except for they would both be zero
17 degrees. But physically separated.

18 If they're not physically
19 separated -- maybe this will help. If
20 they're not physically separated compartments
21 they -- both doors which are a different type
22 open to the same compartment. This is just a

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1 commercial refrigerator and you would apply
2 the definitions of transparent door -- closed
3 transparent and closed solid and transparency
4 that we've proposed previously to determine
5 its equipment classification. So in our
6 current definition if this doesn't have any
7 other doors this would be a transparent --
8 this would be a solid unit.

9 MR. HON: I am totally confused.
10 I'm sorry.

11 MR. BROOKMAN: This, the middle
12 example, Charlie, that's not something you
13 see in practice?

14 MR. HON: There are -- there are
15 becoming popular dual temps but there's
16 really -- the most common use of this is wine
17 coolers where you have half the compartment's
18 for white wine and half for red wine. And
19 there's usually about a 10 degree difference
20 in storage temperatures. But they would
21 definitely be above the 32 degree Fahrenheit
22 rule. But they do not necessarily have a

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1 solid separator between the two, but more of
2 a solid shelf between the two so that you
3 limit the air flow crossover. That's what
4 I'm concerned about.

5 MR. BROOKMAN: Solid shelf. It's
6 not a vertical?

7 MR. HON: Well, you can -- how do
8 you define it? It doesn't say they're
9 vertically separated on any of the
10 definitions above.

11 MR. BROOKMAN: Right. I see,
12 right.

13 MR. HON: Horizontal separation
14 would happen more commonly. And that's what
15 I'm looking at here is that there's a
16 possibility because it's not defined as a
17 vertical separation.

18 And in the item up there it's
19 greater than 32 degrees which may or may not
20 be the case. But defining a separation.
21 Because most shelves in commercial
22 refrigeration are porous, whether they be

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1 wire shelf racking or different things, but
2 not all of them are. And one of the ways you
3 can separate and differentiate temperature
4 gaps is by having a solid shelf.

5 MR. ANDERSON: Tim Anderson,
6 Hussmann. Sarah, I think that the
7 definitions that you put forth are relatively
8 clear.

9 One thing that's not clear to us
10 is how would DOE handle a piece of hybrid
11 equipment? Let's just say it's a hybrid
12 refrigerator that contains at least one
13 compartment that's not covered by the DOE
14 test procedure.

15 So, for example, I have half of a
16 cabinet that's a service over counter and
17 half of that same cabinet, it's a complete
18 unit, is a salad bar. And keep in mind that
19 this could be a self-contained cabinet with
20 one unit.

21 MR. BROOKMAN: Ashley.

22 MS. ARMSTRONG: Good question.

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1 It meets the definitions, let's put it that
2 way.

3 So I'm going to go with my
4 preliminary off-the-cuff answer. We will
5 officially I guess think about this a little
6 more.

7 My initial response would be if
8 it meets the definition, which that would, it
9 would be subject to our test procedure
10 provisions and our standards for the service
11 over the counter.

12 Now, that being said, if there's
13 an issue because part of it's not like the
14 salad table or the buffet table or whatever
15 is not covered. So let's say you believe
16 that the measurements coming out of the test
17 procedure would be representative, you need
18 to get a waiver. Does that make sense?

19 So in other words, if we're
20 making you account for the entire
21 refrigeration system but you believe that's
22 not representative of its use because only

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1 part of it is covered you need to apply for a
2 waiver and you need to explain why and how
3 you would do it. That's my best off-the-cuff
4 answer.

5 MR. ANDERSON: Yes, I understand.

6 So, if it were a remote refrigerator and you
7 could separate the two circuits --

8 MS. ARMSTRONG: That would be
9 easier.

10 MR. ANDERSON: -- so to say we
11 would assume that the service over counter
12 portion would be tested, and that energy
13 counted, and the other portion would kind of
14 be --

15 MS. ARMSTRONG: I would say don't
16 assume anything. If it specifically doesn't
17 tell you to do that in the test procedure,
18 come to us and get that.

19 MR. ANDERSON: Okay, thank you.

20 MR. BROOKMAN: Yes, Jeff.

21 MR. BAUMAN: I have confusion I
22 guess similar to Charlie's. And to me what I

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1 think may be missing here is whether a unit
2 has one refrigeration system, one cooling
3 system and it could share two separate
4 cooling, two evaporator coils, or whether
5 it's sharing air between the two spaces.
6 Because there's some units that could run,
7 like Charlie mentioned the wine coolers that
8 will run at a little bit different
9 temperatures and they'll share air between
10 the two compartments. They have one
11 evaporator. My interpretation of what I'm
12 reading here is that type of thing would be
13 more of a hybrid. If you have a unit
14 that's -- again, we build commercial
15 refrigerator -- refrigerator refrigerators
16 that are two temperatures but they're
17 developed just like a dual temp and they have
18 two refrigeration systems, insulated walls
19 between the two.

20 So to me that would be more
21 consideration for the definition is whether
22 they have a shared refrigeration system or

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1 two separate systems.

2 MS. ARMSTRONG: Okay.

3 MR. BROOKMAN: We have two
4 questions that are coming from participants
5 on the web. Ron Shebik asks "For hybrids, do
6 they have to share the same refrigeration
7 system or unique systems?"

8 MS. WIDDER: As the definitions
9 are currently proposed, no, they don't need -
10 - it can be either. These definitions apply
11 whether there are separate refrigeration
12 systems or the same refrigeration system.

13 We just received comments on
14 perhaps considering that differentiation in
15 addition to the proposed definitions here.

16 MR. BROOKMAN: Okay. And Joe
17 Sanders writes "The middle example is
18 currently purchased by McDonald's." No
19 physical separation exists between the
20 interiors except for a wire shelf.

21 MS. WIDDER: I wouldn't -- not
22 having physically seen the unit.

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1 MS. ARMSTRONG: It's a
2 refrigerator.

3 MS. WIDDER: Right. I would not
4 think that it would be a hybrid refrigerator
5 since they share the same refrigerated
6 compartment and they're not physically
7 separated.

8 MR. BROOKMAN: And they're the
9 same temperature.

10 MS. WIDDER: And they're the same
11 temperature. So they would -- they would
12 actually not be on this slide. They would be
13 a commercial refrigerator.

14 But I've not seen the wire shelf
15 so I'm just going to assume.

16 MS. ARMSTRONG: Let me just read
17 this one because it's going to require some
18 follow-up.

19 So Joe also asked if DOE could
20 publish the formula used to calculate maximum
21 daily energy consumption for each example.

22 Okay, but I'm not exactly sure

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1 what you're asking so I prefer that we just
2 follow up offline. I mean, I'm happy to give
3 you whatever additional information that we
4 can to help clarify this, but I can't answer
5 the question because I don't quite understand
6 it.

7 So I'm going to move to Charlie.
8 But Joe, we can follow up separately. You
9 know how to reach me.

10 MR. BROOKMAN: Okay, Charlie.

11 MR. HON: Well, I think that the
12 -- I think the middle classification would be
13 more clear if people looked at it.

14 Because if you take a service
15 over counter unit, quite often they have a
16 lower level refrigeration which would be
17 closed door type unit down below them. And
18 they're all operating at the same conditions,
19 but quite often a butcher shop doesn't want
20 to put all of his meat out in the same
21 conditions under the lights. So he puts one
22 piece of meat out and then once it's sliced

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1 up he'll go and pull another piece from down
2 below. And I'm assuming that's basically
3 what the concept of a commercial hybrid is
4 about.

5 MS. WIDDER: Correct. That's a
6 good example.

7 MR. BROOKMAN: Jeff?

8 MR. BAUMAN: And there are some
9 refrigerators that are built with -- two-door
10 units with air flow down the middle and it's
11 got panels with louvers or openings in it to
12 distribute air to both sides.

13 Those have never been as far as I
14 know considered as -- I've never considered
15 that a hybrid. I don't know anybody -- maybe
16 other people. But it's just a single
17 temperature.

18 Both have doors but there's
19 panels in the middle because for air flow
20 reasons, for customer reasons or whatever
21 that's how you want the air flow going. But
22 that would be considered a hybrid? It's just

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1 a single temperature.

2 MS. WIDDER: If it's physically
3 separated with a wall which is what I'm
4 understanding, yes, that would be a hybrid
5 unit.

6 MR. BAUMAN: Okay. We'll have a
7 lot of comment about that.

8 MS. WIDDER: Okay.

9 MS. ARMSTRONG: There may be a
10 better way to do this, and it may be that it
11 needs to be thermally isolated components or
12 something -- maybe that's where you were
13 drawing your line. So, think about that in
14 your comments. It doesn't have to be this
15 way.

16 We get a lot of questions about
17 this generally. So we're trying to come up
18 with a way to address them that provides
19 guidance to everyone.

20 I can tell you I probably get
21 several a week alone just on hybrids. And
22 especially if you guys were to look -- I

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1 don't know how many of you have tried to look
2 online, but if you look at the hybrid
3 templates for certification right now that
4 are online, just creating those was a very
5 difficult task, let alone trying to use them.

6 So I can understand where you're coming
7 from.

8 So what we're trying to do is
9 simplify this. We have standards on the
10 books for hybrid. It's very clear how you
11 calculate those. It's just a matter of
12 people are saying, well, I can't tell if my
13 unit's a hybrid.

14 How do I tell that? So, where
15 should DOE draw the line? Should it be a
16 thermally isolated component -- or
17 compartment. I'm sorry, not component,
18 compartment.

19 Or if it's not and it's just a
20 wall and you do have some sharing which is
21 typical of residential, you know, is that
22 something that you consider one compartment,

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1 a single compartment? Or what if you have
2 some sharing but they're at different
3 temperatures? What do you do? So, that's
4 where we're going.

5 MR. BROOKMAN: Steven.

6 MR. KING: Yes, Steve King with
7 Royston LLC. Back to the Hussmann comment.

8 It's basically like in a salad
9 bar situation. It's a percentage ratio how
10 much would be salad bar, then how much would
11 be basically considered refrigerated space.

12 MS. ARMSTRONG: So, I get that
13 part. That's what you do today. That's not
14 in our regs. It is for the determination of
15 which standard applies. It's not necessarily
16 in our regs for determining volumes and other
17 things that you need.

18 So that's where we're going here.

19 We're trying to figure out what do you guys
20 do today to determine. And I'm not sure you
21 all do it the same way based on the questions
22 I've gotten.

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1 MR. BROOKMAN: Neshan.

2 MR. NESHAN: Neshan, Southern
3 Store Fixtures. In the middle configuration
4 you put that they have to be from two -- from
5 different equipment families.

6 MS. WIDDER: Correct.

7 MR. NESHAN: Is that a
8 requirement, or they can be same family?

9 MS. WIDDER: In order to be a
10 commercial hybrid unit they have to be from
11 different equipment families. Two
12 compartments from different equipment
13 families.

14 If they're not from different
15 equipment families -- so, for example, in the
16 center example if both of those were clear
17 doors it would just be a commercial
18 refrigerator.

19 MR. NESHAN: Except, you know,
20 for example, for a -- whether it's a closed
21 door or open display case there are certain
22 temperature requirements, 38 plus or minus 2.

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1 And then we have the lowest operating
2 temperature equipment. They might be exactly
3 the same type of equipment, but temperature
4 requirements are different. So that would
5 not be considered hybrid?

6 MS. WIDDER: No, because those
7 are subject to the same -- they're not
8 separate equipment families. Right? So,
9 that would be more like our example over here
10 on the right.

11 MR. NESHAN: Hold on, hold on.
12 What do you mean they are not the same?
13 Physically they are not but temperature-wise
14 they're different.

15 MS. WIDDER: Yes, but temperature
16 does not differentiate equipment families.
17 So --

18 MR. BROOKMAN: You've got to use
19 the microphone. We want this on the record.
20 Please say your name.

21 MR. SUHARNO: Anwar Suharno from
22 Royston LLC. If you have a dual temp unit on

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1 a single compartment you can switch back and
2 forth between low temp and medium temp. You
3 will have different --

4 MS. WIDDER: Yes, we're going to
5 get to that one too.

6 MS. ARMSTRONG: That is not a
7 hybrid. I can tell you that one.

8 MS. WIDDER: Those are not
9 hybrids. But those are also -- so, like our
10 example on the very left, that it's two
11 compartments, both with glass doors that have
12 different temperatures, that's not a hybrid
13 unit.

14 The configuration of doors on the
15 geometry of the unit is what determines
16 equipment families. If you look at those --
17 I wish I had a slide of this. There's a
18 table in the CFR where you look up standards.

19 It's in 431.66 and there's column headings.
20 And one of the headings is equipment family.

21 And you'll -- things like
22 vertical closed transparent, semi-vertical

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1 closed transparent, solid, open. Those are
2 the terms that are in that row and so those
3 are the things, whether it's transparent,
4 solid, or open. And it's geometry,
5 horizontal, semi-vertical, vertical are the
6 things that determine equipment families.

7 The temperatures are a separate
8 differentiator, but they're not used to
9 determine whether or not it's a hybrid.

10 MR. NESHAN: Neshan again here,
11 Southern Store Fixtures. But when you're
12 testing the equipment one of the provisions
13 of it is that we can test the case to lowest
14 temperature that that case can operate at.

15 MS. WIDDER: Right, so --

16 MS. ARMSTRONG: No, I disagree.
17 So, if you cannot operate at the rating
18 temperature required then you are required to
19 test at the lowest temperature it's capable
20 of operating only if you cannot meet the
21 temperature in the regs. So, you just don't
22 get to pick, you have to prove that you

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1 cannot meet the rating temperatures in the
2 reg, the integrated average temperatures in
3 the regs. And if you cannot then it goes to
4 the lowest.

5 MR. NESHAN: Correct. No, I
6 understand that.

7 MS. ARMSTRONG: Okay.

8 MR. NESHAN: But we have a floor
9 display case. I will not be able to test
10 that at 38 degrees. I will be testing it at
11 50 degrees. You see?

12 MS. ARMSTRONG: If that's the
13 lowest it ever goes.

14 MR. NESHAN: Correct. But then,
15 however, they are from the same product
16 family. But --

17 MS. ARMSTRONG: You're okay.

18 MR. NESHAN: -- according to this
19 you are telling me that I cannot.

20 MS. ARMSTRONG: No, no, no, it's
21 not.

22 MS. WIDDER: No, you can still

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1 rate that.

2 MS. ARMSTRONG: Let's talk
3 offline. Because that's not a hybrid.
4 You're not talking about a hybrid here.

5 MS. WIDDER: A lowest application
6 product temperature case --

7 MR. NESHAN: No, I understand.
8 But they're combined in the same frame.
9 There are two pieces.

10 MS. ARMSTRONG: I get it. I get
11 it. We can go from there.

12 MS. WIDDER: So we welcome
13 comments on that. For that case you would
14 test -- okay, we'll just keep going.

15 MS. ARMSTRONG: It's the first
16 example, it's not the second. It's two
17 different rating temperatures. It's not a
18 hybrid. So you're going with --

19 MS. WIDDER: You'd go 38 and 50.

20 MS. ARMSTRONG: Yes, you're going
21 a side that's at one rating temperature and a
22 side that's at 50. That's the difference

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1 there.

2 MR. BROOKMAN: The one on the
3 left.

4 MS. ARMSTRONG: Well, it's his --
5 it's looking at it -- it depends.

6 MS. WIDDER: On the left but
7 different numbers.

8 MS. ARMSTRONG: Yes.

9 MS. WIDDER: Okay?

10 MS. ARMSTRONG: So it allows you
11 to do what you're describing, it's just not
12 hybrid that allows you to do what you're
13 describing. Okay?

14 MR. BROOKMAN: Okay? Additional
15 thoughts, comments here. This is
16 complicated. I think we're getting --
17 there's going to be more. Let's keep going.

18 MS. WIDDER: Yes, okay.
19 Similarly around temperatures there are three
20 different temperatures that are referenced in
21 the DOE test procedure and application of
22 standards. The rating temperature which we

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1 were just discussing, the operating
2 temperature of the equipment, and the
3 integrated average temperature which is the
4 temperature measured during the test
5 procedure.

6 DOE has received inquiries from
7 interested parties about the relationship of
8 these temperatures and how to determine
9 equipment classification versus how the
10 equipment is tested.

11 So DOE proposes to establish new
12 definitions for rating temperature and
13 operating temperature in the regulations to
14 help clarify the application of these terms
15 and what these terms mean.

16 The rating temperature is in the
17 standards table at 431.66(d)(1). That's the
18 table of standards. It describes the
19 integrated average temperature at which a
20 model of commercial refrigeration equipment
21 should be evaluated in accordance with the
22 DOE test procedure unless that piece of

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1 equipment is rated in accordance with the
2 lowest application product temperature
3 provision which is only applicable if it
4 can't meet the rating temperature for that
5 equipment class. So that's the rating
6 temperature.

7 The operating temperature is also
8 present in the same table. And it refers to
9 the range of integrated average temperatures
10 at which the unit of commercial refrigeration
11 equipment is capable of operating.

12 So for refrigerators that's
13 greater than or equal to 32 degrees, or I
14 forget where the equal to is. For freezers
15 it's less than 32 degrees and for ice cream
16 freezers that's established in the
17 definition.

18 And then the integrated average
19 temperature is in the test procedure, 431.64,
20 is the average refrigerated compartment
21 temperature determined in accordance with the
22 DOE test procedure for commercial

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1 refrigeration equipment. And that's defined
2 in the regulations currently as the average
3 of all test package temperature measurements
4 taken over the course of the test.

5 So, to clarify this, DOE is
6 proposing these two new definitions on the
7 left in the box, the integrated -- the rating
8 temperature means the integrated average
9 temperature a unit must maintain during
10 testing. And the operating temperature is
11 the temperature range of -- the range of
12 integrated average temperatures at which a
13 commercial refrigeration unit is capable of
14 operating.

15 Similarly, DOE is proposing new
16 definitions for the equipment we've been
17 discussing, commercial refrigerators,
18 commercial freezers and commercial
19 refrigerator-freezers that similar to the
20 definition for ice cream freezer incorporate
21 these operating temperature conditions into
22 the definition. So it's more clear.

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1 A commercial refrigerator
2 operates at greater than 32 degrees
3 Fahrenheit. And the definition proposed is a
4 unit of commercial refrigeration equipment in
5 which all refrigerated compartments in the
6 unit are capable of operating at or above 32
7 degrees Fahrenheit.

8 A commercial freezer, the
9 operating temperature established in the
10 standards is less than 32 degrees Fahrenheit.

11 A unit of commercial
12 refrigeration equipment in which all
13 refrigerated compartments in the unit are
14 capable of operating below 32 degrees
15 Fahrenheit is the proposed definition.

16 And a commercial refrigerator-
17 freezer is a unit that has one compartment
18 that is capable of operating at or above 32
19 degrees Fahrenheit and one compartment that
20 is capable of operating less than 32 degrees
21 Fahrenheit as we previously defined.

22 And then the ice cream freezer

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1 definition is the existing definition that's
2 in the regs right now.

3 This very last slide I think
4 brings up the type of equipment that was
5 referenced previously. Some models feature
6 operating temperature ranges that cause the
7 model to span multiple equipment classes. Do
8 you want to comment first? Sure.

9 MR. BROOKMAN: Charlie.

10 MR. HON: Charlie Hon. Am I
11 mistaken? I thought it was -15. On this
12 temperature ice cream freezer. Okay, thank
13 you.

14 MS. WIDDER: That's not proposed
15 to change, so if it was -15 then that was an
16 error.

17 MR. HON: Okay. I just wanted to
18 clarify because I'm going --

19 MS. WIDDER: An editorial error.

20 MR. HON: Okay, just wanted to
21 verify.

22 MS. WIDDER: I apologize for

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1 that.

2 MR. HON: No problem.

3 MS. ARMSTRONG: The rating
4 temperature is -15.

5 MS. WIDDER: Yes, I think the
6 rating temperature is -15 but the definition
7 is -5.

8 MS. ARMSTRONG: That's correct.

9 MS. WIDDER: Yes.

10 MR. HON: Why would you have it
11 when you couldn't reach the definition?
12 Wouldn't it just be a freezer?

13 MS. ARMSTRONG: It's anything
14 less than -5. So it goes down.

15 MS. WIDDER: So a freezer -- I'll
16 just read the definition for everyone. A
17 commercial freezer that is designed to
18 operate at or below -5 degrees Fahrenheit,
19 and that the manufacturer designs, markets
20 and intends for storing, displaying, or
21 dispensing of ice cream is an ice cream
22 freezer and it's rated at -15 degrees

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1 Fahrenheit. Does that help clarify?

2 MS. ARMSTRONG: Right, that's the
3 difference. The slide's accurate, it's just
4 that it's -- anything under -5 is considered
5 an ice cream freezer if it's got the other
6 intended for ice cream. It's just you have
7 to test it at -15. If you can't get down to
8 -15 that's when the LAPT things kick in.

9 MS. WIDDER: Right.

10 MS. ARMSTRONG: This is why we
11 have questions on rating temperatures and
12 integrated average temperatures, by the way.

13 MS. WIDDER: And hopefully these
14 definitions help clarify. If they don't,
15 please --

16 MR. BROOKMAN: So, thank you,
17 Ashley. We have a question from Charity
18 Njau. Pardon me if I butchered your name.
19 "Does this mean that commercial wine cellars
20 are covered products?"

21 MS. WIDDER: Commercial wine
22 cellars?

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1 MS. ARMSTRONG: Chillers.

2 MS. WIDDER: Chillers. A

3 commercial --

4 MS. ARMSTRONG: Yes.

5 MR. BROOKMAN: Cellars.

6 MS. WIDDER: If it's a unit, if
7 it meets the definition of commercial
8 refrigeration equipment as defined and meets
9 the definition of commercial refrigerator
10 defined here then yes.

11 MS. ARMSTRONG: So, what this is
12 trying to show you is that --

13 MR. BROOKMAN: Ashley Armstrong.

14 MS. ARMSTRONG: Oh, sorry.

15 MR. BROOKMAN: Go ahead.

16 MS. ARMSTRONG: What this is
17 trying to show you is just because it can't
18 be tested at the rating temperature doesn't
19 mean it's not covered and subject to DOE's
20 test procedures and standards.

21 So what we're trying to make
22 clear here is that the definitions are based

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1 on operating temperature, and the operating
2 temperature, there's large ranges.

3 And so just because something
4 operates, for a wine chiller it may be above
5 32 and maybe it can't operate at the rating
6 temperatures prescribed in the test. Well,
7 you still have to test it. You have to test
8 it at the lowest temperature it's capable of
9 operating. You just aren't excluded.

10 And that's what we're trying to
11 make clear with this. There's a difference
12 between determining scope of coverage. It
13 meets the definition, period. And something
14 that can't be tested because it's not capable
15 of reaching that rating temperature.

16 MR. BROOKMAN: Yes, Bruce.

17 MR. HIERLMEIER: In remote
18 equipment how cold the unit can get often
19 depends on how large the condensing unit
20 system is.

21 So, when we test in our lab we
22 can put a small condensing unit system on it

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1 for that test and not be able to get very
2 cold. You could go to a different test
3 laboratory that has a system that's designed
4 to run 10 or 15 cases at one time and they
5 can get very cold.

6 So there's an inconsistency in a
7 remote system as to how cold the unit can get
8 because it's actually based on the test
9 equipment that can be supplied at any given
10 point in time. It's not like a self-
11 contained that has a condensing unit in it.
12 You turn it down, the condensing unit runs
13 flat out and it's finished.

14 So, how does DOE plan to make
15 that a uniform test?

16 MS. WIDDER: There are provisions
17 in the lowest application product temperature
18 definition and test procedure that establish
19 specific requirements for remote cases that I
20 am not remembering off the top of my head but
21 have to do with setting the suction
22 temperature on the remote case at a

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1 temperature that allows you to maintain the
2 intended rating temperature, the lowest
3 application temperature for that equipment.

4 But I would encourage you to
5 review that and to the extent that it's not
6 sufficient please submit comments.

7 MR. BROOKMAN: Collin, do you
8 want to add in here? No? Okay. Nick.

9 MR. SCHRINER: On the integrated
10 average temperature, I don't know if you're
11 familiar, above 32 degrees by NSF-7 you have
12 to be able to maintain a temperature below 41
13 degrees.

14 On the integrated average, say
15 you have to turn down your evaporator to
16 maintain this below 41 degrees by NSF-7
17 standards. Does DOE care if our integrated
18 average is below the specified 38 degrees if
19 we can get an average of 36 to maintain? Or
20 is it -- because usually we do that test at
21 once.

22 MS. WIDDER: So that's also -- in

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1 the previous, the 2012 test procedure final
2 rule in addition to the lowest application
3 product temperature DOE established
4 provisions that equipment tested in
5 accordance with NSF-7 at lower test --
6 internal refrigerated temperatures could be
7 submitted for compliance with DOE's energy
8 conservation standards. However, you're
9 still subject to the same standard as if that
10 equipment was rated at the prescribed rating
11 temperature.

12 MR. SCHRINER: So as long as we
13 meet the 38 or below --

14 MS. ARMSTRONG: In the future.

15 MS. WIDDER: In the future, not
16 today.

17 MS. ARMSTRONG: The key here is
18 that we added those provisions to apply with
19 amended standards. So, they do not apply
20 today. So right now you're required to meet
21 the rating temperature +/- 2 irrespective of
22 NSF.

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1 We did address this comment and
2 going forward in the future, and what I mean
3 future, it's going to be compliance with
4 amended standards. We don't know the date
5 yet. You guys know the NOPR still is out.
6 So it is in the future some ways down the
7 road.

8 MR. SCHRINER: So in other words
9 we're going to have to perform two different
10 tests. One day get our integrated average --

11 MS. ARMSTRONG: You could
12 petition for a waiver to test at a lower
13 temperature and explain why. You could do it
14 that way. Right now that's what our regs
15 require, yes.

16 MR. BROOKMAN: Anything
17 additional?

18 MS. ARMSTRONG: You could submit
19 comments to this NOPR that we should consider
20 modifying that too, or at least consider it,
21 and see if DOE -- and why we should allow it
22 now, the use of it now. I'm just telling you

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1 what our regs are right now so it's clear.

2 MR. SCHRINER: I'm confused I
3 guess. What does NSF-7 really matter to DOE
4 as long as their integrated average is 38
5 degrees? Can we just run a test to meet DOE
6 standards and to meet NSF standards?

7 MS. ARMSTRONG: Ideally, yes.
8 And we've acknowledged that that should be
9 the ideal scenario. And as long as the NSF
10 standards are more conservative, so a lower
11 temperature would give you a more
12 conservative rating and that's what you
13 choose to do. We don't require that but
14 that's what you choose to do. I think that
15 was our acknowledgment in the 2012 rule.

16 The problem was we did not adopt
17 those requirements for now. So, when you
18 submit comments if you believe we should
19 adopt those requirements for implementation
20 now please explain why.

21 MR. SCHRINER: Thank you.

22 MR. BROOKMAN: Okay. Sarah, did

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1 you finish presentation on 36?

2 MS. WIDDER: No, I did not. We
3 have to get there.

4 MR. BROOKMAN: I'd like you to do
5 that.

6 MS. WIDDER: Yes.

7 MR. BROOKMAN: Yes.

8 MS. WIDDER: And this is the last
9 slide. But it does relate to the definitions
10 of commercial refrigerator and commercial
11 freezer that we just discussed.

12 DOE is aware that some models of
13 commercial refrigeration equipment feature
14 refrigeration systems or integrated average
15 temperatures, operating temperatures that
16 span the range of multiple equipment classes
17 as we've just defined them.

18 For example, a CRE model with an
19 operating temperature range of 15 degrees to
20 36 degrees meets the definition of both a
21 commercial refrigerator and a commercial
22 freezer.

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1 This is a hypothetical case. I
2 don't know that it actually exists.

3 DOE proposes that equipment
4 capable of operating within multiple
5 equipment classes would have to be tested and
6 certified as each of those equipment classes.

7 So this case would have to meet the
8 requirements for a commercial refrigerator
9 and a commercial freezer.

10 Now, because this case can only
11 operate down to 15 degrees Fahrenheit the
12 lowest application product temperature
13 provision would be applicable for this case
14 when rated as a freezer.

15 Now we request comment on our
16 definitions. DOE requests comment on the
17 definitions for operating temperature and
18 rating temperature. We previously discussed
19 the definitions for commercial refrigerator
20 and commercial freezer, and the application
21 of those definitions to variable temperature
22 equipment.

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1 MR. BROOKMAN: So we'd like to
2 hear comment on 34, 35 and 36. And let's do
3 that now. And then shortly we're going to
4 take a break. Any additional comments here?

5 These are new proposed
6 definitions. It would be very helpful for
7 the Department to receive some preliminary
8 feedback on these if you can offer it here.
9 Ashley?

10 MS. ARMSTRONG: So, Ron on the
11 phone asked how do you differentiate without
12 changing nomenclature. And I'm not sure I
13 understand the question. Yes, let's unmute
14 him.

15 MR. BROOKMAN: Can he speak --
16 yes.

17 MS. ARMSTRONG: I mean, really
18 what this is saying is that if you have a
19 model and it operates as a refrigerator and
20 it operates as a freezer.

21 So you design a model that you
22 had such a wide operating range that it

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1 essentially spans a refrigerator and a
2 freezer.

3 And the user basically is allowed
4 to toggle between the two, whatever one they
5 want to use depending on the application.

6 We're saying you have to do both.

7 You have to run the test as if it was a
8 refrigerator, you have to run the test as if
9 it was a freezer and you have to certify
10 that. You have to be compliant with that.

11 MR. HON: This is Charlie Hon. I
12 am assuming this means only if -- some units
13 can cross over but we don't intend them to
14 and we don't market them that way. We would
15 only market them, say, as a freezer,
16 especially something like an ice storage
17 cabinet which operates in the mid-twenties.
18 That thing could be turned warm enough to
19 where it would technically fall in the
20 refrigeration category, but it never is
21 marketed as that. It is exclusively marketed
22 for an ice case.

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1 MS. ARMSTRONG: So, I will say
2 you've got the intention correct. That was
3 the intention.

4 Our operating temperatures are
5 pretty distinct. They cut off. So if you
6 believe we should provide additional
7 clarification for the wiggle room you're
8 welcome to submit comments. If that makes
9 sense.

10 MR. BROOKMAN: I'm noting that on
11 34 there are two new definitions and on 35
12 there are three.

13 MS. ARMSTRONG: Ron, you're
14 unmuted if you want to explain to me your
15 question. If I didn't clarify.

16 MR. BROOKMAN: About
17 nomenclature. We can't hear you if you've
18 unmuted your phone.

19 MS. ARMSTRONG: All right, well
20 we can follow up later if it happens to come
21 up. Or I can follow up offline if he has
22 more.

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1 MR. BROOKMAN: Any thoughts on
2 these definitions? This is my last prompt.

3 MS. ARMSTRONG: Let's do a break
4 before we move into the next section.

5 MR. BROOKMAN: Yes, let's take a
6 break. It's 10:35 almost. We're due for a
7 break. I'm in no hurry to get out of here
8 today. I know some of you might be --

9 (Laughter)

10 MR. BROOKMAN: -- might be facing
11 weather though when you depart. So I'm
12 thinking that we should try and press on and
13 get this done before we break for lunch. Our
14 original end time is supposed to be 1
15 o'clock-ish.

16 So go and get coffee, get a piece
17 of fruit, or a pastry, or something to
18 sustain you through probably a 1 o'clock or
19 so end time, okay? And let's go quickly to
20 get coffee.

21 You know, you must wear a badge
22 inside the building. The restrooms are on

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1 both ends of the hall. Coffee's on the
2 ground floor, down the elevator shaft to the
3 ground floor and it's there to the left.

4 So good progress, really good
5 progress, good commentary. We will resume at
6 10 until 11, 10 until 11.

7 (Whereupon, the foregoing matter
8 went off the record at 10:34 a.m. and went
9 back on the record at 10:54 a.m.)

10 MR. BROOKMAN: At my peril, at
11 our mutual peril I want to -- since you had
12 time to think about it and talk about it
13 during the break any additional thoughts on
14 slide 34 and 35? Particularly about the
15 definitions. The comment so far on
16 definitions has been very, very helpful. Any
17 additional thoughts on that before we move
18 on?

19 MS. ARMSTRONG: I think we're
20 good.

21 MR. BROOKMAN: You think we're
22 good, okay. Okay, nothing additional then.

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1 Yes, yes, Bruce.

2 MR. HIERLMEIER: The only thing I
3 thought without reading the standard that in
4 the past if you had a dual temperature unit
5 you tested at the lowest temperature it could
6 obtain. And I don't know if this changes it
7 and now you have to test also at the medium
8 temperature because that will have an impact
9 on the performance of the equipment.

10 Most equipment requires
11 additional energy to reach low temperatures.

12 Some of that energy is backed out
13 automatically when a customer switches to a
14 higher temperature level. Some of that
15 energy is now -- like fan motors typically
16 are two-speed due to the cost.

17 So, that could minimize the
18 utility of some of this equipment for some of
19 our customers. We don't sell a lot of them
20 but the ones that do have them like dual
21 temps.

22 MR. BROOKMAN: Okay. Okay, thank

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1 you. Okay, so we're going to move on --

2 MS. ARMSTRONG: Can I actually?

3 MR. BROOKMAN: Yes, Ashley.

4 MS. ARMSTRONG: Can I ask a
5 question about that though? Are you telling
6 me then that because you have to test at the
7 medium temperature as well? How would that
8 impact the -- I mean, if you're already
9 testing at the low temperature, the more
10 consumptive temperature, and you have to test
11 at the medium temperature because it now is a
12 freezer and a refrigerator.

13 I understand that you may not
14 have been running the test before so if you
15 told me that's additional tests, that's
16 additional testing cost, I get that part.

17 But why is it a utility issue
18 unless you have to actually change the design
19 to meet the standards?

20 MR. HIERLMEIER: Well, changing
21 the design to meet the standards will
22 increase the cost to the customers.

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1 MS. ARMSTRONG: Does it not meet
2 the standards now?

3 MR. HIERLMEIER: It potentially
4 wouldn't meet it as a medium temp. It would
5 meet it as a low temp at the lower one, but
6 all the energy isn't necessarily backed out
7 when it's run as a medium temp. All the door
8 heat isn't backed out --

9 MS. ARMSTRONG: And your position
10 is you should be allowed to sell a
11 refrigerator, a single unit that operates as
12 a freezer and a refrigerator as long as it
13 meets the standards in one configuration. Is
14 that your position?

15 MR. HIERLMEIER: Yes, the lowest
16 temperature.

17 MR. STARR: This is Louis Starr
18 with NEEA. How about another option is that
19 they make the refrigerator so that it can't
20 operate. In other words, if they lock it out
21 in the hardware so it won't operate in those
22 other modes then that would be fine.

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1 In other words, if they're not
2 expecting to meet the standards and it's not
3 going to be operated in that mode if it's
4 locked out. That could be an option.

5 MS. ARMSTRONG: I think they're
6 offering it for sale specifically to be
7 operated in that mode. And they're saying it
8 should only have to be tested and compliant
9 with one of those options.

10 MR. BROOKMAN: Louis, you want to
11 comment?

12 MR. HON: This is Charlie Hon. I
13 have a question. Is that because of
14 marketing of the product at two temperatures?

15 MS. ARMSTRONG: Are you asking
16 me? What do you mean?

17 MR. HON: Okay. If we would --
18 we have some equipment that it can drift
19 over.

20 MS. ARMSTRONG: So I get the
21 drifting. I'm saying actually dual temp that
22 is meant to be a refrigerator and a freezer

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1 and you just have like a toggle or something
2 like that.

3 It seems like I'm hearing that
4 the position -- I didn't understand the
5 utility argument. I only understand the
6 utility argument if it's such that one of
7 those positions isn't compliant and requires
8 a redesign.

9 MR. HIERLMEIER: When it moves up
10 to the medium temp it would require a
11 redesign. You'd have to change more of the
12 loads to use less energy at medium temp.

13 MR. BROOKMAN: Okay, Bruce.
14 Thank you. Did you wish to comment more,
15 Louis?

16 MR. STARR: Well, it just -- it
17 seems to me that if they're marketing to
18 operate in multiple temperature ranges and
19 multiple classes then it needs to meet the
20 efficiency requirement of those cabinets if
21 that's the specific marketing. That would
22 seem like the logical thing to me.

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1 MR. BROOKMAN: It needs to be
2 compliant.

3 MR. STARR: Right.

4 MR. BROOKMAN: However many
5 categories of product that you wish to play
6 in.

7 MR. STARR: Correct.

8 MR. BROOKMAN: Yes, yes, Tim.

9 MR. ANDERSON: Tim Anderson,
10 Hussmann. So, kind of further on that point.

11 Looking at the second bullet on slide 36 it
12 says DOE proposes that equipment capable of
13 operating within multiple equipment classes.

14 Is a better word than "capable" "intended?"

15 My concern is that we certainly
16 have low-temperature cabinets that are only
17 ever intended to operate at low temperature.

18 But certainly you could connect them to a
19 remote condensing system and operate in an
20 evaporating temperature that made the
21 equipment medium temp. So it's capable of
22 operating at medium temp, but that's not our

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1 intent. It's not marketed that way.

2 MR. BROOKMAN: You're not
3 shipping it that way.

4 MR. ANDERSON: It's a remote
5 case. It's a component of a larger system.

6 MS. ARMSTRONG: He doesn't know,
7 yes. So I think that gets somewhat -- that's
8 a different point but it somewhat gets to my
9 point that I made to Charlie earlier.

10 You know, the way we've defined
11 it in here, those operating ranges are cut
12 and dry. If it falls below it goes into this
13 dual -- if it falls below or above in
14 capability it goes into that other bucket.

15 So if there is additional
16 language that you would like the Department
17 to consider about marketing, intended
18 operation, in addition to capability we would
19 need to understand how you draw the line, why
20 we should draw the line.

21 I mean, someone could also offer
22 one -- I'll tell you the counter. Someone

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1 could offer one and say, you know, it has a
2 toggle button very clear that says -- I'm
3 just making this up, by the way -- it says
4 refrigerator on the left, it says freezer on
5 the left. But oh, well, I didn't intend for
6 it to ever be used as a refrigerator. So how
7 do we bridge that gap is what I'm asking.

8 I'm not saying you do that, I'm
9 not saying anybody in the room would ever do
10 that. I'm just saying that's the counter.

11 MR. NESHAN: Neshan, Southern
12 Store Fixtures. On dual temp cases,
13 especially remote, not necessarily -- even if
14 it's a dual temp case, not necessarily the
15 case would have a toggle switch.

16 MS. ARMSTRONG: I'm simplifying.

17 MR. NESHAN: Yes. It is at the
18 discretion of the refrigeration equipment
19 manufacturer to have the control or the
20 switch at the rack or at the case. So if
21 they have it at the rack the case
22 manufacturer would have absolutely no idea if

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1 the case is going to be used for a medium
2 temperature application or not.

3 MR. BROOKMAN: Ron, we hope, is
4 unmuted and he wants to speak. So Ron,
5 hopefully you can get in here. Speak. We're
6 not hearing anything, Ron. Let's try it
7 again in a little bit. We're hoping to hear
8 from you. Let us know. Emily will let us
9 know when you can get back in here.

10 Okay. I think we covered that
11 sufficiently for right now. Let's go to
12 Collin.

13 MR. WEBER: All right. Thanks,
14 Doug. So right now we're going to move into
15 talking about some additional clarifications
16 to the test procedure.

17 The first of these will be with
18 respect to treatment of equipment features
19 and accessories. And so what this stems from
20 is the summer 2013 reg neg sessions which
21 most of you in this room were part of for
22 CC&E of commercial HVAC refrigeration water

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1 heating equipment and in which issues were
2 raised by participants regarding treatment
3 during the test procedure of specific
4 equipment features, components and
5 accessories which may be in place on certain
6 basic models of CRE.

7 The following slides discuss some
8 specific features and components and
9 accessories, and present proposals on how
10 these items should be treated under the test
11 procedure. These are basically intended as
12 proposed codifications of what was agreed
13 upon through consensus vote during the reg
14 neg process.

15 So hopefully this should move
16 fairly quickly and smoothly because most
17 people have seen this before and voted in
18 approval of it. So we're just going to go
19 through these on a feature-by-feature basis.

20 The first of these features,
21 customer display signs and lights. These are
22 additional signage, exterior, outside the

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1 body of the refrigerated cabinet for the
2 purpose of advertising the product.
3 Optional, not integral to the cabinet and do
4 not serve to illuminate product which is
5 inside the body of the cabinet. So it's
6 completely exogenous to the function.

7 The proposal from the reg neg was
8 that supplemental lighting existing solely
9 for purposes of advertising or drawing
10 attention to the case and which is not
11 integral to the case would not be operated
12 during testing under the DOE test procedure.

13 And so as an administrative note
14 we don't have any comment boxes on all of
15 these. If there are any comments, interject
16 at any point.

17 MR. BROOKMAN: I think that's the
18 way to go. Comments here? No comments here.

19 MR. WEBER: All right. Second
20 feature, condensate pan heaters and pumps.
21 Many CRE types come with means of removing
22 condensate, melt water. Some do it in a

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1 completely static manner using wicking kits
2 and that sort of thing.

3 However, others come equipped
4 with electric resistance heaters that
5 vaporize the water and others come equipped
6 with pumps which pump the melt water to an
7 external drain similar to how a remote
8 condensing case would be set.

9 The proposal that heaters and
10 pumps would be installed and operational per
11 ASHRAE 72 under the accessories section for
12 the entirety of the test including
13 stabilization of pull-down, steady state and
14 performance testing period.

15 It was agreed during the reg neg
16 that clarification would be added that prior
17 to the start of the stabilization period the
18 condensate pan should be dry.

19 And then for the entire period of
20 the test following the start of that official
21 stabilization period any condensate generated
22 will be allowed to accumulate reflecting

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1 effectively field conditions unhindered. And
2 water would not be manually added or removed
3 at any point during the test.

4 MR. BROOKMAN: Comments on this
5 proposal? Yes.

6 MR. HIERLMEIER: Bruce from Zero
7 Zone. We have a number of customers that use
8 remote equipment in strip mall type
9 applications. So the floors are not cut with
10 floor drains. They may be leasing the stores
11 and not want to spend it. They opt to use
12 condensate pans to dissipate that heat.

13 In the modeling that DOE did when
14 they did self-contained equipment they
15 modeled in condensate pans as part of that
16 energy use. They did not model in condensate
17 pans as part of the energy use for remote
18 equipment.

19 So, in part now they've changed
20 the rules. Self-contained get extra energy
21 whereas remote cases don't get that energy
22 use capability.

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1 So it effectively eliminates the
2 ability for that customer base to use a store
3 that does not have a floor drain, damaging
4 the utility of our equipment in their
5 application. So in the past those
6 pans were shipped -- generally they're
7 shipped loose. Customer may put them on top
8 of the case, may put them someplace else, may
9 power them separately from a wall outlet.
10 And now they won't have those options
11 anymore.

12 MS. ARMSTRONG: Why won't they
13 have the option? You have to test it this
14 way and it has to be compliant when tested
15 this way.

16 MR. HIERLMEIER: Your modeling
17 allowed for it in the self-contained.
18 Included that energy level.

19 MS. ARMSTRONG: I get that part.

20 MR. HIERLMEIER: It did not
21 include the energy level in it. So your
22 energy levels are set too stringent to allow

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1 this to apply.

2 MS. ARMSTRONG: Okay.

3 MR. BROOKMAN: Tim?

4 MR. ANDERSON: I'd like to echo
5 all of Bruce's comments. If this applies to
6 remote cases it will preclude the use of
7 condensate pans on any remote cases basically
8 because of the stringency of the levels.

9 It's also important to note that
10 the volume of this application of condensate
11 pans on remote cases, and I can only speak
12 for Hussmann, is less than 1 percent. I
13 mean, it's the exception, it's not the rule.

14 But it will reduce the utility of the
15 equipment for that -- for those customers.

16 MS. ARMSTRONG: I'm going to
17 point out Hussmann participated in the
18 negotiations.

19 MR. ANDERSON: And Ron feels very
20 strongly. And if he could speak he would.
21 Ron feels very strongly that the discussions
22 in the working group were pertaining to self-

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1 contained cases.

2 MR. BROOKMAN: Maybe, Ron, we'll
3 invite you again to unmute your phone and try
4 and speak. Not working. Emily says it's not
5 working. Sorry, Ron. Ron, if you want to
6 write out some comments then Emily will --
7 questions or comments we'll read them into
8 the meeting here. Do our best. Lauren?

9 MS. ZELINSKI: I just wanted to
10 echo what both Hussmann and Bruce had said
11 earlier.

12 I would say from AHRI's
13 perspective almost all of our manufacturers
14 would agree that on remote cases including
15 the condensate pan is an optional feature
16 that very few people use. And so causing all
17 of those to be tested would not meet the
18 setup of this unit.

19 MR. BROOKMAN: Okay. Louis?

20 MR. STARR: This is Louis Starr
21 with NEEA. In these cases that you're
22 talking about why wouldn't just a small pump

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1 that would pump it over to some other
2 drainage thing work in that application
3 instead of using a pan heater?

4 MR. ANDERSON: Tim Anderson,
5 Hussmann. Certainly a pump would be an
6 option. These are customer requirements that
7 we're fulfilling.

8 MR. HIERLMEIER: Bruce from Zero
9 Zone. In some applications in these stores
10 there's not an immediate drain available.
11 You're in a store where there's no place to
12 pump it off, or local health inspectors take
13 a dim view of pumping condensate water a long
14 distance as well.

15 MR. BROOKMAN: Other comments
16 here before we move on? We have a comment
17 from Ron I think.

18 Ron says "Cases tested at LAPT,
19 now that LAPT is common terminology, do we
20 still need to apply for a waiver when testing
21 this way?"

22 MS. ARMSTRONG: So, the answer --

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1 the proposal would be that you do not. But
2 the caveat there is until the final rule is
3 effective you will. So, once the final rule
4 is out and if DOE ends up adopting the LAPT
5 provisions as proposed in this rule it gets
6 rid of the waiver process for that, although
7 until that happens, until the rule is
8 effective you will still have to go through
9 those procedures.

10 MR. BROOKMAN: Ron continues.
11 Cases that operate at two different rating
12 temps, how will these be certified?

13 MS. ARMSTRONG: So, if the --
14 it's going to depend on if they span multiple
15 operating temperatures. That's how we
16 discussed it. So it's not about rating temps
17 so much as operating ranges such that they
18 fall into refrigerator, freezer, or like ice
19 cream freezer. And so that's how that goes.

20 If there are multiple rating
21 temperatures then that's going to -- and
22 they're multiple rating temperatures such

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1 that the LAPT is a different number and it
2 cannot be tested at a rating temperature,
3 that's a different question. But still
4 within the same operating temperature range.

5 So, they're both refrigerators.
6 One can only get down to 50, one can get down
7 to 40, neither can get down to the rating
8 temperature. That's a different question.
9 So I don't know if that's what he's asking.

10 MR. BROOKMAN: He continues.
11 When speaking with Laura B. I understood that
12 you would need uniqueness in the nomenclature
13 for two different ratings? Testing at NSF
14 temps, I thought this was already allowed in
15 the regs. Condensate heaters --

16 MS. ARMSTRONG: Hold on, go back
17 to the one. So, I think I made clear the NSF
18 thing earlier. It's not in the current test
19 procedure required today. It's in the test
20 procedure that will be required in the
21 future. So yes, DOE did address it but it's
22 not required today.

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1 My comment still stands. If you
2 feel that it should be required today please
3 explain, et cetera.

4 MR. BROOKMAN: Does that address
5 two different ratings? Okay. And then test
6 standard NSF temps.

7 MS. ARMSTRONG: That one I just
8 addressed.

9 MR. BROOKMAN: I thought this was
10 already allowed in the regs. Condensate
11 heaters, the test method for self-contained
12 only, this is not spelled out.

13 MS. ARMSTRONG: The negotiations,
14 I will say that slide said nothing about
15 self-contained versus remote. There's
16 nothing in the slide, there was nothing on
17 the vote. It's all documented.

18 Now, you may submit your comments
19 but there was nothing there. There are
20 plenty of people in the room that were there.
21 You may have had different intention but
22 there is nothing on the slide there.

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1 MR. BROOKMAN: And finally from
2 Ron, "In the working group I mentioned that
3 remote cases were not part of the heated pan
4 discussion."

5 MS. ARMSTRONG: What I just said
6 stands.

7 MR. BROOKMAN: So written
8 comments on these specific issues I think
9 would be very, very helpful. Tim?

10 MR. ANDERSON: One last comment
11 on the heated condensate pans for remote
12 equipment. In effect, what will happen is
13 that the end users of the equipment will
14 purchase condensate pans separate from the
15 cases, probably from a separate manufacturer,
16 and will install them themselves, and you
17 know, bypassing UL safety regulations.

18 So I don't think you're going to
19 preclude that energy from being spent, you're
20 just going to have the end users find a way
21 around it. And in my opinion the equipment
22 will not be properly sized and potentially

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1 not as safe.

2 MR. BROOKMAN: Ashley?

3 MS. ARMSTRONG: Okay, so just to
4 take a step back. So, explain to me, do the
5 remote cases -- what is the percentage of
6 remote cases today that actually get sold
7 with condensate pan heaters or pumps? From
8 the manufacturer.

9 MR. ANDERSON: Tim Anderson from
10 Hussmann. I can say for Hussmann it's less
11 than 1 percent.

12 And like Bruce mentioned earlier,
13 the application is typically where a retailer
14 will go into an existing space, often a small
15 format store, could be a strip mall or
16 something similar. And they don't want to
17 add in thousands and thousands of dollars to
18 trench the floors to add in floor drains.

19 MS. ARMSTRONG: So, you believe
20 across the board regardless of whether that
21 unit is offered for sale with the use of a
22 condensate pan heater, if it is a remote case

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1 it should not be tested with the pan heater
2 or pump? That is what your belief is?
3 That's not what our proposal is, but
4 clarifying what your belief is.

5 MR. ANDERSON: Certainly. Tim
6 Anderson. My belief is that it's such a low
7 volume exception that it should be exempted
8 from the test procedure.

9 MS. ARMSTRONG: Okay.

10 MR. BROOKMAN: Louis.

11 MR. STARR: This is Louis Starr
12 with NEEA. If they install these after-
13 market pan heaters are they going to be
14 connecting into your equipment with those pan
15 heaters?

16 MR. ANDERSON: Tim Anderson. No,
17 they would just be connecting to the
18 electrical. You do mean an electrical
19 connection?

20 MR. STARR: Right. I mean, I'm
21 trying to see how it's going to affect the UL
22 rating of your machine, that's what I'm

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1 trying to get at. Because they'll have to
2 reply with the national electrical codes.

3 In other words, any electrical
4 device you install is going to have to be --

5 MR. ANDERSON: Certainly. But if
6 you're --

7 MR. STARR: So, if they're not
8 connecting your equipment, they're complying
9 with electrical codes, there's no real safety
10 issue it seems to me.

11 MR. ANDERSON: If they don't size
12 the pan properly you can run into other
13 issues. Not electrical issues. Water on the
14 floor which can create lawsuits for the
15 retailer. You know, you can create other
16 issues there aside from electrical issues.

17 MR. STARR: The other thing is as
18 far as the difference between adding a
19 condensate pump as opposed to adding an
20 electrical pan heater it costs a lot of money
21 to put a fairly sizable electrical load.

22 If the place is cooking food they

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1 have ways of draining stuff there already.
2 So connecting into a pump does not have to be
3 directly located above where it's draining
4 to. You can have a pump and it can pump 15-
5 20 feet from its location.

6 So if they're draining stuff in
7 the restaurant I don't understand why they're
8 not able to connect into a plumbing
9 connection. I mean, as when I used to do
10 design that's what I would do is I would go
11 find an appropriate receptor. I wouldn't go
12 and say hey, let's find an electric pan
13 heater.

14 I'm trying to understand the
15 design sense, why someone would come in
16 afterwards and decide to put in a pan heater
17 rather than just putting in a condensate pump
18 that has a very small connection.

19 MR. ANDERSON: It's Tim Anderson.
20 The retailers that we're typically selling
21 to are not restaurants. These are small
22 grocery stores, dollar stores, things of that

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1 nature. Not places where they're preparing
2 food.

3 MR. STARR: Right, but they're
4 going to have to get a permit to put their
5 stuff in, right? In the code. In other
6 words, a design engineer or somebody that's a
7 design professional is going ahead and
8 designing this stuff and outfitting it such
9 that it's meeting code.

10 So all these things still apply
11 and the best design is still -- that's
12 probably why you're only selling 1 percent is
13 because it doesn't make a lot of sense to do
14 it that way.

15 MR. BROOKMAN: Steven.

16 MR. KING: Yes, Steve King with
17 Royston LLC. We have to keep in mind
18 concurring with Hussmann even local law and
19 local building laws around the United States
20 do not support floor drains anymore. So
21 that's all the way down into the local codes.

22 And as you say, point of purchase

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1 equipment such as this with a new store build
2 is not going to have a drain system in some
3 local municipalities, so.

4 MR. BROOKMAN: We're about to
5 move on. Yes? Here we go.

6 MR. WEBER: All right, thanks.
7 The next feature under discussion was anti-
8 sweat heaters on display doors.

9 Many transparent door cases come
10 with them obviously, serve to evaporate
11 condensate water. In some instances
12 manufacturers might equip their cases with
13 higher than standard anti-sweat power due to
14 expected operation in adverse conditions,
15 high ambient, high humidity, that sort of
16 thing.

17 The proposed resolution agreed on
18 through the reg neg sessions was that DOE
19 proposes that anti-sweat heaters should be
20 operational during testing under the test
21 procedure with some further explanation that
22 models of the user-selectable setting must be

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1 turned on and set to the maximum usage
2 position.

3 Models featuring an automatic
4 control system that's not adjustable by the
5 user must be operating in the automatic
6 state. And if a unit is not shipped with a
7 controller from the point of manufacture but
8 is intended in all cases to be used with a
9 controller the manufacturer must make
10 representations of the basic model based upon
11 the rate of performance as equipped and
12 tested with the appropriate compatible
13 controller.

14 MR. BROOKMAN: Comments on this
15 proposal? Yes, Bruce?

16 MR. HIERLMEIER: Bruce from Zero
17 Zone. Just as we go through some of these
18 other ones it seems somewhat random as to
19 which things get to be turned on and which
20 ones don't.

21 So customers that have outdoor
22 markets or poor air conditioning, they have

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1 to spend more money to have automatic
2 controls. In some of these other
3 areas they get to have filters. They can
4 direct the air flow. It doesn't have to be
5 tested with these item. They get to have
6 more utility without more expense, whereas
7 some of our customers with poor conditions
8 have to spend more money to get the utility
9 out of the equipment.

10 MR. BROOKMAN: So, how would you
11 suggest this be modified?

12 MR. HIERLMEIER: We'd prefer to
13 allow the user in an adjustable situation to
14 be able to turn it down and the equipment be
15 set at -- one that would be marked for 75-55
16 percent relative humidity.

17 MR. BROOKMAN: But that's for the
18 user, or for the tester?

19 MR. HIERLMEIER: During test and
20 then the user would have that as well so that
21 -- again, you're relying on the user to turn
22 down his equipment to use the least amount of

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1 energy as possible because it's in their best
2 interest as well.

3 MR. BROOKMAN: Okay, thank you.
4 Additional comments here on anti-sweat door
5 heaters? Okay.

6 MR. WEBER: Next feature, UV
7 lights, usually included for sanitation
8 purposes. And it was agreed that UV lights
9 should not be turned on during the test
10 procedure.

11 Temperature displays and alarms.
12 Illuminated displays providing visual
13 information on equipment operating status.
14 Also, alarms that would notify if a case fell
15 out of the specified operating -- or the
16 desired operating range. Proposal is that
17 these items are simply integral to the
18 function of the equipment and would be
19 enabled during the test as they would be used
20 in normal field operation.

21 MR. BROOKMAN: Comments on
22 illuminated temperature displays and alarms.

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1 MR. WEBER: Next item, non-
2 permanent condenser filters. Manufacturers
3 may offer models equipped with these sorts of
4 filters to prevent particulates from blocking
5 the air flow. And the agreed upon proposal
6 was that non-permanent filters should be
7 removed during the test.

8 MR. BROOKMAN: No controversy
9 there? No comment.

10 MR. WEBER: Security covers. An
11 option to include straps for the devices to
12 secure the condensing unit, preventing theft
13 or tampering. And the proposal is that
14 security devices should be removed during
15 testing under the DOE test procedure.

16 Next item, grill options.
17 Manufacturers may offer optional grills that
18 are used to deflect air flow in unique
19 applications such as rear mounts near to a
20 wall where the air flow needs to be directed
21 upwards.

22 The agreed-upon position during

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1 the reg neg sessions was that, if present,
2 non-standard grills would be removed during
3 testing.

4 Coated coils. Evaporator coils,
5 and condenser coils as well, generally coated
6 and specified for use in environments where
7 there would be exposure to acids or
8 oxidizers. Treated with additional coating
9 such as an epoxy or polymer to prevent
10 corrosion or other deterioration.

11 Existing test procedure
12 accurately accounts for the performance of
13 all types of coils including coated coils and
14 therefore there's no explicit proposal or
15 change to anything because it's already
16 captured.

17 MR. BROOKMAN: Comments here? No
18 comments.

19 MR. WEBER: Misting or
20 humidification systems usually put in place
21 to maintain the quality of products such as
22 fresh produce, seafood or meat. And if

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1 present, these systems would be left inactive
2 during the test.

3 MR. BROOKMAN: Yes.

4 MR. NESHAN: Neshan, Southern
5 Store Fixtures. If this is -- obviously this
6 is done for specific applications. If
7 misting systems and humidification systems
8 are not to be operational during testing
9 where in reality they would be used during
10 the operation, why the previous slide which
11 was the coil? I mean, the coated coil is --
12 it must be tested. However, this is not
13 allowed to be tested.

14 MS. ARMSTRONG: Correct.

15 MR. BROOKMAN: Ashley?

16 MS. ARMSTRONG: Correct.

17 MR. NESHAN: So why?

18 MS. ARMSTRONG: Because that's
19 what we negotiated.

20 MR. NESHAN: Well, negotiated
21 because you're forced to accept it because
22 basically the issue was that if this --

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1 because there were other parties involved.
2 And if that was -- if coated coil are not to
3 be tested then that could also be waived from
4 the unitary units. I'm not sure which part
5 of it it was. Isn't that's correct?

6 MS. ARMSTRONG: Please, I don't
7 think anyone was forced to vote a certain
8 way.

9 MR. HON: Charlie Hon. On the
10 negotiations the discussion was coated coils
11 are integral, built into the system and
12 always in use 100 percent of the time.

13 These other items are very --
14 they are very transient. You can set them
15 wherever you want to. They're beyond the
16 control of the design. It's purely on
17 control of the operator. And that's where a
18 lot of the changes came from.

19 MR. STARR: This is Louis Starr.
20 I think the other part is some things like
21 coated coils inherently save energy in that
22 the fact that if they're not coated they

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1 become -- they quickly lose their use or
2 abilities. So they actually are an energy-
3 saving device. So I think that's the other
4 part of what got decided to be as part of
5 included and not included.

6 So, something that obviously will
7 not save energy such as anti-sweat coils is
8 not the same as coils when they get plugged
9 and they're more inefficient. So having them
10 coated makes sense in that case. So that's
11 the other part of it that was kind of the
12 deciding process on that.

13 MR. BROOKMAN: Any additional
14 comments here? Yes.

15 MR. HIERLMEIER: Just to be
16 somewhat of a pain -- Bruce from Zero Zone --
17 they could certainly test these energized at
18 full on during the test procedure. So it
19 runs completely just like they want the anti-
20 sweat heaters on the doors to run at full.

21 So, and again, it's sort of one
22 of these things where, okay, these people get

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1 a certain utility. Energy doesn't matter as
2 long as you keep your vegetables fresh which
3 is fine. But in other applications all of a
4 sudden energy becomes important and we don't
5 care if you have to mop the floor.

6 MR. BROOKMAN: Moving on.

7 MR. WEBER: Next item under
8 discussion during the negotiations was air
9 purifiers. Supplemental purifying systems to
10 remove contaminants from air which is
11 recirculated within the body of the case.

12 The proposed position was that
13 air purifiers should be inactive during
14 testing under the DOE test procedure.

15 MR. BROOKMAN: No comments?

16 MR. WEBER: General purpose
17 outlets. Some CRE units may come equipped
18 with integrated general purpose electrical
19 outlets which can be used to power additional
20 equipment completely external to the
21 refrigerator or freezer such as scales or
22 slicers, for example, in a deli environment.

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1 The agreed-upon position being
2 proposed for confirmation here is that while
3 testing using the DOE test procedure no
4 external load should be connected to any
5 general purpose outlets which are contained
6 within the unit.

7 MR. BROOKMAN: No comments.

8 MR. WEBER: And I believe the
9 final item, yes, is crankcase heaters. Some
10 CRE units come with electric resistance
11 heaters designed to keep the compressor at an
12 optimal operating temperature during low
13 ambient conditions such as if a unit was
14 installed outdoors.

15 The proposal for codification
16 here was that if present crankcase heaters
17 should be operational during the test.

18 Under the proposal, however, if a
19 control system is used to modulate the
20 operation of the crankcase heater it should
21 be used as intended according to the
22 manufacturer's instructions. The intended

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1 result of that being that at the DOE test
2 conditions you generally would not see a
3 crankcase heater activated.

4 MR. BROOKMAN: Okay. Yes, okay.

5 MR. NESHAN: Question. Neshan,
6 Southern Store Fixtures. What happened to
7 the crankcase pressure regulators? I thought
8 we discussed that when we agreed. I mean,
9 that's missing from here. Crankcase pressure
10 regulators.

11 MR. BROOKMAN: Crankcase pressure
12 regulators.

13 MS. ARMSTRONG: You're right,
14 it's not included. So we'll make sure that's
15 clear.

16 MR. NESHAN: Thank you.

17 MR. BROOKMAN: And the way it
18 would be clear would be to state --

19 MS. ARMSTRONG: I don't know yet.

20 MR. BROOKMAN: Okay.

21 MS. ARMSTRONG: It was part of
22 the package that went to ASRAC so we just

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1 need to pull the language.

2 MR. BROOKMAN: Okay. Moving
3 ahead?

4 MR. WEBER: Sure. So, that
5 concludes the section specific to the
6 outcomes of the reg neg sessions.

7 But there were some other
8 clarification items that arose as a result of
9 stakeholder inquiries and other avenues that
10 we'd like to just address and seek comment
11 upon.

12 The first of these involves the
13 use of energy management systems during
14 testing. The DOE test procedure states at
15 this time that all devices that would
16 normally be used in the field must be
17 installed and operated in the same manner
18 during the test procedure unless this is
19 inconsistent with any requirement of the test
20 procedure. This therefore includes energy
21 management systems.

22 If normal field installation or

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1 operation would be inconsistent with any test
2 procedure requirement of which we'll give an
3 example then the specific function that
4 causes inconsistency must be disabled.

5 To give a little bit of
6 concreteness to this, if an energy management
7 system raises or lowers the cabinet
8 temperature, modulates it such that the
9 applicable integrated average temperature
10 can't be maintained, then in this case the
11 function of the EMS that varies the cabinet
12 temperature would need to be disabled in
13 order to enable the provisions of the DOE
14 test procedure, that rating temperature, to
15 be met.

16 Other functions, however, may
17 remain enabled provided that they don't cause
18 other effects that would cause the unit to
19 violate provisions of the test procedure.

20 If those functions cannot be
21 controlled separately, if it's a matter of
22 the whole system, whole control scheme being

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1 on or off, then that system would need to be
2 disabled so that all provisions of the test
3 procedure could be met.

4 MR. BROOKMAN: Comments on the
5 foregoing? I see none.

6 MR. WEBER: All right. The
7 second issue to be addressed for
8 clarification discusses lighting.

9 DOE test procedure currently
10 states that all devices that would normally
11 be used in the field must be installed and
12 operated in the same manner during the test.

13 ARI 1200-2006 and AHRI 1200-2010
14 specify that the measured energy consumption,
15 TDEC or CDEC, shall include lighting loads.

16 Seventy-two states at 6.1.1 that
17 all standard components such as and including
18 lights, to paraphrase, shall be installed and
19 used as recommended by the manufacturer.

20 Due to these explicit references
21 to case lighting, DOE believes that the
22 energy consumption associated with lights

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1 installed on a model of CRE is intended to be
2 captured during testing. It's just
3 background mostly.

4 And in 2012 test procedure final
5 rule DOE adopted specific provisions for the
6 treatment of lighting occupancy sensors and
7 schedule controls, establishing specific time
8 periods during which these controls,
9 variation in lighting may be turned off or
10 dimmed during the test.

11 DOE wishes to clarify in response
12 to some inquiries that are received that a
13 mechanical light switch should not constitute
14 an energy management system or a lighting
15 control for that matter.

16 Models of commercial
17 refrigeration equipment with lighting
18 installed in the case and no energy
19 management system shall be tested with lights
20 on to their maximum illumination level for
21 the duration of the test.

22 Any lighting controls of the

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1 user-selectable setting must be turned on and
2 set to the maximum usage position. An
3 exception to this being models with solid
4 doors with lighting controls that
5 automatically turn off internal case lighting
6 when the door is closed.

7 MR. BROOKMAN: Comments on this,
8 on lighting testing. Yes, Bruce.

9 MR. HIERLMEIER: Bruce from Zero
10 Zone. I had a question. If you have like an
11 open case that has multiple shelves and
12 customers can choose to buy a light under the
13 shelf or not buy a light under the shelf does
14 that case need to be tested with all the
15 lights installed?

16 Or can you test it with the
17 lights, you know, I have different basic
18 models like a two-shelf lit case is one basic
19 model, a three-shelf lit case, and basically
20 break it up into basic models. So you can
21 have different energy levels depending on the
22 number of lights that you are selling at that

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1 instant.

2 MR. BROOKMAN: And an unlit case
3 would be another basic model.

4 MR. HIERLMEIER: Yes, or a top
5 nose and bottom sometimes.

6 MS. ARMSTRONG: Let me think
7 about that for a minute. Yes, let me think
8 about that for a second.

9 MR. HIERLMEIER: I had a
10 different question as well.

11 MR. BROOKMAN: Okay.

12 MR. HIERLMEIER: The standards
13 now coming out and allowing energy levels to
14 be used with automatic lighting controls, but
15 I thought in 2012 you couldn't start using
16 that testing procedure until the regulations
17 got updated and in a sense reduced to account
18 for that.

19 Is that still the case or would
20 you be able to start testing once this is
21 adopted and start testing with those controls
22 in place without having to reduce the energy

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1 level of the standard? Or do we have to wait
2 till the 2017?

3 MR. WEBER: The next slide
4 clarifies that.

5 MR. HIERLMEIER: Okay.

6 MR. WEBER: We're just taking
7 comment at this point.

8 MS. ARMSTRONG: Go ahead.

9 MR. HON: Wait a second, I have a
10 question before we go. Charlie Hon, True
11 Manufacturing.

12 I have one concern about the
13 statements here because certain occupancy
14 sensors have a learning curve built into them
15 where they learn over a period of time when
16 to turn the lights on and off.

17 Unfortunately, during the test
18 procedure the rooms are closed, there's no
19 activity inside of the test room, so that if
20 they're locked in there for more than a week
21 or so they'll have learned to turn the lights
22 off because there's no activity near the

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1 unit. How do you deal with that?

2 MR. WEBER: Is there a manual
3 override on those?

4 MR. HON: They can be programmed
5 to override.

6 MR. WEBER: Okay. Because the
7 way the test procedure currently reads it's a
8 fixed time off. It's a fixed time off.

9 MR. HON: But there are many of
10 them now that are learning curves built into
11 them.

12 MS. ARMSTRONG: So by default
13 they would be tested with this program. So,
14 if they can't be -- I mean, right now if they
15 can't be overridden such that the program
16 could be applied to them then if you want
17 credit for them you need to come get a
18 waiver.

19 MR. WEBER: So, moving on to
20 speak to the point that Bruce raised.

21 The way the NOPR has reorganized
22 the language of the test procedure divides it

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1 into -- proposes to divide it into two
2 appendices with different applicabilities in
3 time.

4 The first appendix would be
5 what's relevant today and applicable today.
6 The second would be what was being discussed
7 earlier which is tied into revised standards
8 and would be applicable at that time.

9 So, in the first appendix what
10 would be on the books today and for use today
11 would be that all lighting must be energized
12 at the maximum illumination level throughout
13 the whole test. And the exception would be
14 for solid door models that include automatic
15 controls such as just a pressure switch that
16 disable case lighting when the door is
17 closed.

18 In Appendix B this includes the
19 material from the 2012 test procedure rule
20 that was discussed as well as this
21 clarification. All lighting shall be
22 energized to its maximum illumination level

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1 except for a model that's equipped with
2 occupancy sensors or scheduled controls, or
3 when a model is outfitted with other
4 permanently installed automatic energy
5 management systems that control lighting.

6 And if a unit that includes -- if
7 a unit includes an automatic lighting control
8 system it should be enabled during the test.

9 If it's equipped with occupancy sensor and
10 controls it should be tested in accordance
11 with the provisions adopted specifically
12 referring to those systems in the 2012 test
13 procedure final rule.

14 MR. HIERLMEIER: So when would B
15 start applying? Would that be when 2017
16 comes out? Would that be when this NOPR gets
17 finished? Kind of what year I guess.

18 MR. WEBER: B would be tied to
19 the compliance with new standards.

20 MR. HIERLMEIER: So it would be
21 like 2017?

22 MS. ARMSTRONG: We don't know

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1 what the actual date is, but roughly.

2 MR. HIERLMEIER: The 3-year --

3 MS. ARMSTRONG: Correct.

4 MR. HIERLMEIER: Okay. Thank
5 you.

6 MS. ARMSTRONG: With the caveat
7 that DOE has issued guidance, across-the-
8 board guidance for all products that allows
9 the use of amended test procedures early but
10 as part of that guidance you would have to
11 comply with amended standards early and
12 certify such. So, that's -- this Appendix B
13 is key to the provisions of the 2017-ish
14 standards.

15 MR. WEBER: All right. Final
16 issue for clarification was in response to an
17 inquiry on test package temperatures.

18 Stakeholders inquired whether the
19 DOE test procedure has specific requirements
20 for the test simulators and filler packages
21 that must be met prior to loading them into
22 the unit at all.

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1 ASHRAE 72 provides specific
2 instructions as to loading of test simulators
3 and filler packages. That's at 6.2. As well
4 as with respect to temperature stabilization
5 at 7.4. States that the unit must run till
6 steady state conditions as defined in Section
7 3 are achieved. And then after steady state
8 operation is reached the unit must operate
9 for another period of 12 hours before it's
10 deemed to be stabilized.

11 Therefore, DOE doesn't believe
12 that the product simulators or test packages
13 need to be at any specified temperature
14 condition prior to loading before the
15 stabilization or pull-down period even
16 occurs.

17 If there's no questions on that
18 then Sarah will address this final major
19 section.

20 MS. ARMSTRONG: So, one quick
21 question to all of you before Sarah starts
22 talking. We have one section left and

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1 there's a couple of minor things at the
2 beginning but what we're going to get into I
3 have a feeling will cause a lot of discussion
4 which is TDA. And some of the slides -- I've
5 rearranged some of the slides for TDA and I'm
6 going to be presenting that part.

7 But before we do that does anyone
8 need a 5-minute break? Just a quick 5-minute
9 break. Because we will be pushing through so
10 we can end this before lunch. So does
11 anybody want a quick 5-minute break, go to
12 the bathroom, do whatever you need to do,
13 check email, make a quick phone call? And we
14 reconvene in 5 minutes. Yes. So take a
15 quick 5-minute break.

16 MR. BROOKMAN: Okay, 5 minutes.
17 You know where the restrooms are.

18 (Whereupon, the foregoing matter
19 went off the record at 11:39 a.m. and went
20 back on the record at 11:48 a.m.)

21 MR. BROOKMAN: All right, let's
22 start. The last few days have been very

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1 frustrating here. We haven't been able to --
2 for web participants to join us and speak
3 into the room. But now I think we have that
4 fixed. So those of you that are joining us
5 via the web, please feel free to raise your
6 hand and we'll fit you into this
7 conversation.

8 And, Joe, you had several
9 comments. However, Ron, had several
10 comments. Ron, do you want to speak now to
11 cover anything that we may not have covered
12 sufficiently from your perspective so far?
13 Ron's not on right now, okay.

14 MR. ANDERSON: He said he lost
15 the webinar.

16 MR. BROOKMAN: And in fact we had
17 to reboot the webinar, so apologies for that
18 as well.

19 Okay, now we're going to proceed.
20 Are we ready to do this?

21 MS. WIDDER: We're ready.

22 MR. BROOKMAN: Sarah.

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1 MS. WIDDER: Okay. So, we have a
2 few, as Ashley mentioned, a few minor test
3 procedure issues before we'll get into the
4 other major clarification that DOE is
5 proposing that Ashley will present regarding
6 TDA. Just a few minor clarifications.

7 The first is around rounding of
8 test results and certified ratings. The
9 current DOE test procedure incorporates by
10 reference ARI Standard 1200-2006 and then in
11 the 2012 provisions which would be applicable
12 with any amended standards, AHRI Standard
13 1200 -- you can't even see that -- there,
14 2010. New one.

15 So, those standards require that
16 the energy consumption for covered equipment
17 be expressed in terms of kilowatt hours per
18 day and stated in increments of 0.01 kilowatt
19 hours per day.

20 Similarly, since those standards
21 are incorporated by reference in the DOE test
22 procedure, DOE's -- the certified ratings

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1 that manufacturers submit to DOE should also
2 be reported in units of kilowatt hours
3 rounded to 0.01 kilowatt hours per day.

4 One thing that was not clear was
5 when that rounding should occur. And in the
6 case that that has any influence on the
7 certified value that one manufacturer test
8 lab would get versus another DOE wishes to
9 clarify that these calculations should be
10 done using raw measured values and then
11 rounded to 0.01 kilowatt hours at the end.
12 And we will -- DOE is proposing to
13 incorporate these requirements into the DOE
14 test procedure to clarify.

15 MR. BROOKMAN: Comments here.

16 MS. WIDDER: Any comments? We
17 request comment on the proposed rounding
18 provisions and their applicability to the
19 test procedure and the certification
20 requirements. All right.

21 MR. BROOKMAN: No comments here.

22 MS. WIDDER: We'll move on.

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1 MR. NESHAN: Neshan, Southern
2 Store Fixtures. Just one comment. This
3 rounding of the test results and the raw
4 data, the raw data per ASHRAE Standard 72, it
5 only carries to one decimal point. If you
6 check.

7 MS. WIDDER: I'm not recalling
8 that requirement, but the Department will
9 certainly review that.

10 MR. NESHAN: All right, thank
11 you.

12 MR. BROOKMAN: You, I presume,
13 would like to have them be consistent.

14 MR. NESHAN: Yes.

15 MR. BROOKMAN: I just wanted that
16 in the record.

17 MR. NESHAN: No, no, absolutely,
18 yes.

19 (Laughter)

20 MR. BROOKMAN: Okay, thank you.
21 Okay.

22 MS. WIDDER: Okay. Actually, I

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1 have a follow-up question for Massoud. Are
2 you saying that the CDEC and TDEC are only
3 rounded to 0.1 kilowatt hours per day? Or
4 the actual -- what is only rounded to 0.1?

5 MR. NESHAN: No, Neshan, Southern
6 Store Fixtures. Obviously ASHRAE 72 has
7 nothing to do with the CDEC and all that.
8 It's just a method of testing and recording.

9 MS. WIDDER: Right.

10 MR. NESHAN: When you record
11 temperatures and pressures and all that
12 stuff.

13 MS. WIDDER: Right. And energy.

14 MR. NESHAN: And energy, carried
15 to one decimal point. That's all I'm saying.

16 MS. WIDDER: So the energy in
17 ASHRAE Standard 72 is only one decimal point.

18 MR. NESHAN: The BTU requirement,
19 though, when you measure the BTU requirement
20 of a remote display case it is one decimal
21 point.

22 MS. WIDDER: Well, there's

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1 certainly more significant digits in terms of
2 BTUs though.

3 MR. NESHAN: Yes, but
4 temperatures. I mean there is --

5 MS. WIDDER: Right, right. We'll
6 certainly consider that in the subsequent --
7 how significant digits are carried through.
8 Thank you.

9 MR. BROOKMAN: Okay, moving on.

10 MS. WIDDER: This is just some
11 clarifying slides on the lowest application
12 product temperature provision. There's been
13 some discussion of that earlier today and
14 also inquires that have been received by the
15 Department regarding applicability of this
16 provision.

17 In light of those this slide
18 provides background on what is currently
19 required and then subsequent slides provide
20 proposed clarifications to the lowest
21 application product temperature provision.

22 Currently, DOE defines lowest

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1 application product temperature as the
2 integrated average temperature closest to the
3 specified rating temperature for a given
4 piece of equipment achievable and repeatable
5 such that the integrated average temperature
6 for a given unit is within +/- 2 degrees
7 Fahrenheit of the average of all integrated
8 average temperature values for that basic
9 model.

10 It's confusing and sort of a
11 mouthful. The idea, the intent of this
12 definition is that a manufacturer is to
13 certify -- if a piece of commercial
14 refrigeration equipment, a model, a basic
15 model of commercial refrigeration equipment
16 cannot meet the rating temperature for that
17 equipment class the manufacturer would
18 certify the lowest application product
19 temperature.

20 The intent is that lowest
21 application product temperature will be
22 consistent across the units for that basic

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1 model. So, for example, you couldn't pull --
2 you could not specify 8 degrees Fahrenheit
3 and then have other models that maybe DOE
4 would pull in enforcement that really can, in
5 fact, either meet the rating temperature or
6 meet something much lower than your specified
7 lowest application product temperature. We
8 would like consistency across units of a
9 given basic model. So, in light of that, it
10 was a confusing definition.

11 This is just another -- a little
12 more background about when the lowest
13 application product temperature applies. We
14 discussed that it applies to a certain basic
15 model of commercial refrigeration equipment
16 that cannot be operated at the prescribed
17 rating temperature, but all other
18 requirements of the DOE test procedure apply.

19 Except that you have to test --
20 the rating temperature shall be +/- 2 degrees
21 of the lowest application product
22 temperature. The measured integrated average

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1 temperature recorded during the test will be
2 within 2 degrees of the certified lowest
3 application product temperature for that
4 piece of equipment.

5 So, here's an example. Hopefully
6 this helps. The lowest application product
7 temperature. So, for example, if a basic
8 model freezer has an operating range from 8
9 to 28 degrees Fahrenheit and thus cannot
10 operate at the prescribed rating temperature
11 of zero degrees Fahrenheit for freezers that
12 basic model would be tested as low as it can
13 go which in this case is 8 degrees
14 Fahrenheit.

15 In this case, if DOE were to
16 randomly select a representative unit to test
17 for compliance purposes that unit should be
18 able to maintain an integrated average
19 temperature between 6 and 10 degrees
20 Fahrenheit, and that should be as low as it
21 can go for that unit.

22 And it should not -- that unit

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1 must not be able to operate at zero degrees
2 Fahrenheit. That is the important part.

3 For many cases this is always the
4 lowest thermostat setting. That's a
5 clarification.

6 And when DOE conducts a test in
7 accordance with the lowest application
8 product temperature a lot of times that will
9 be turning down the thermostat all the way.
10 And so to the extent that that's consistent
11 among units is what we're going for here.

12 MS. ARMSTRONG: I'm going to say
13 one clarification.

14 MS. WIDDER: Yes, go for it.

15 MS. ARMSTRONG: Not a lot of
16 times. We will be turning the thermostat all
17 the way down. So, if for some odd reason
18 your literature speaks to a certain operating
19 range for your temperature and we happen to
20 test a unit and we crank it down to the
21 lowest thermostat setting and it is operating
22 outside of that range we are going to test at

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1 the lowest temperature the unit is capable of
2 running. I just want to make that
3 clarification.

4 And you are required to test at
5 the lowest temperature that unit is capable
6 of running.

7 MS. WIDDER: So, to clarify, DOE
8 proposes to modify the lowest application
9 product temperature provision. Hopefully
10 this is a little more clear.

11 Lowest application product
12 temperature means the lowest integrated
13 average temperature at which a given basic
14 model is capable of consistently operating,
15 i.e., maintaining so as to comply with the
16 steady state stabilization requirement
17 specified in ASHRAE as incorporated by
18 reference for the purposes of testing under
19 the DOE test procedure.

20 The other part of turning down
21 the thermostat all the way is that
22 temperature when we're at the lowest

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1 application product temperature still has to
2 meet the stabilization requirements specified
3 in ASHRAE. And so those are the two bounds
4 that help us define what lowest application
5 product temperature is.

6 And now that we're explicitly
7 referencing ASHRAE 72-2005 DOE is proposing
8 to incorporate by reference that standard
9 which has always been the method of test
10 inherent in AHRI or ARI 1200-2006 and AHRI
11 1200-2010. But now that's explicitly
12 incorporated by reference in the DOE's test
13 procedures in the CFR as well.

14 DOE requests comment on its
15 proposed modification to the lowest
16 application product temperature definition.
17 Is it more clear? Are there other things
18 that should be incorporated?

19 I think hopefully our intent is
20 clear, but it is difficult to write in words.

21 And its proposal to incorporate by reference
22 ASHRAE 72.

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1 MR. BROOKMAN: Charlie.

2 MR. HON: Charlie Hon, True
3 Manufacturing. ASHRAE 72-2005, the final
4 review publication is in action right now and
5 will be completed at the end of this year.
6 So that probably needs to be considered as
7 2014 publication.

8 The second thing is that you're
9 relying on mechanical sometimes controllers
10 on some of these units. So, the mechanical
11 controllers can change.

12 And I know good and well what I
13 will do is dummy up the controller to run a
14 little bit colder than a normal controller
15 just so I don't run into a problem. But that
16 way you have a very conservative number.

17 But 2 degrees Fahrenheit plus or
18 minus on a controller turned all the way down
19 I think is not repeatable at all. I think
20 you're going to be 3 to 4 degrees at least.

21 MS. WIDDER: Just to follow up on
22 that. If you have suggestions about a better

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1 way that the Department could define the
2 lowest temperature for a basic model such
3 that it's consistent but also not allowing
4 for manufacturers to just pick any number.
5 That's the struggle we have.

6 MR. HON: This is Charlie Hon
7 again. From our point of view we will be
8 conservative and we will just dummy up the
9 controller to where it runs slightly colder
10 than we believe our standard product would
11 ever get to and thereby guarantee that we
12 would have a very conservative energy number.

13 But I cannot guarantee that we
14 would be repeatable within +/- 2 degrees of
15 where we said the unit was tested. But isn't
16 it more important to be conservative and
17 efficient in our efficiency number?

18 MR. BROOKMAN: Okay. So I
19 thought the explanation was really quite
20 clear. So additional comments on this
21 proposed definition? Yes, Tim.

22 MR. ANDERSON: In Section 2.2 of

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1 Appendix B, I'll go ahead and read this. It
2 says for remote condensing equipment without
3 a thermostat or other means of controlling
4 temperature at the case the lowest
5 application product temperature is the
6 temperature achieved with the adjusted dew
7 point temperature as defined in AHRI Standard
8 1200 set to 5 degrees colder than that
9 required to maintain the manufacturer's
10 lowest specified application temperature.

11 Can you comment on how you came
12 about that number and illustrate in the
13 example how that would be used? The example
14 you had on slide 63.

15 MS. WIDDER: So, in the 2012 test
16 procedure rulemaking the issue regarding the
17 applicability of the lowest application
18 product temperature to remote cases that do
19 not have thermostats in the case was raised.

20 And DOE recognizes that this is an issue.

21 So this was a suggestion received
22 by manufacturers as part of the comments on

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1 the NOPR. The way that it would apply here
2 is if -- I can imagine physical limits in
3 terms of refrigerant flow and pipe sizing
4 that would limit how -- or the heat exchanger
5 size that would limit the cooling that a case
6 is capable of and that intended temperature
7 would be your lowest application product
8 temperature.

9 And then because there's
10 variability in the sizing of condensers that
11 can be attached to the remote case you would
12 set the section temperature on that case such
13 that you maintained the intended lowest
14 application product temperature for that
15 case. This is --

16 MS. ARMSTRONG: Minus 5, right?

17 MS. WIDDER: Yes.

18 MS. ARMSTRONG: We would do the
19 same thing you would do. So in that case the
20 example is not as applicable because the
21 instructions are different. But DOE would do
22 the same thing you would do in setting that

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1 temperature.

2 MR. BROOKMAN: And say what that
3 would be.

4 MS. ARMSTRONG: Well, he read it.
5 I don't have it in front of me, so.

6 MR. ANDERSON: Okay. Tim
7 Anderson. I want to make sure that I
8 understand. So, I'm going to give an
9 example.

10 I'm going to use the LAPT of 8
11 that was used in the example on slide 63. So
12 if the LAPT for a piece of equipment is 8
13 Fahrenheit you would then -- and let's say
14 that the dew point temperature, not adjusted
15 dew point, dew point temperature to achieve 8
16 is zero. Okay? So that's basically the
17 manufacturer's recommended set point to
18 achieve an IAT of 8.

19 The adjusted dew point -- or, I'm
20 sorry. So then you would take 5 below that.

21 You would run the unit at a -5 adjusted dew
22 point which equates to a -2 dew point. So

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1 you would run the unit at -2.

2 MS. WIDDER: Yes, it sounds
3 right. The adjusted dew point 5 degrees
4 cooler than that required to maintain the
5 lowest application product temperature. So
6 yes, if the dew point is zero and then you go
7 5 degrees below.

8 MS. ARMSTRONG: Are you asking 5
9 degrees below the dew point or 5 degrees to
10 get 5 degrees below the lowest application
11 product temperature?

12 MS. WIDDER: No, the adjusted dew
13 point to achieve the lowest application
14 product temperature. Will you read it again?

15 MS. ARMSTRONG: Let's just take
16 it offline.

17 MS. WIDDER: Yes, we'll --

18 MS. ARMSTRONG: I get your
19 question though.

20 MR. BROOKMAN: Ron would like to
21 speak. Ron, I think this can work. Welcome.

22 MR. SHEBIK: Can you guys hear me

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1 now?

2 MR. BROOKMAN: Yes, we can hear
3 you. Yay.

4 MR. SHEBIK: I appreciate it, but
5 actually the question I had Tim Anderson
6 worded it much better and he got the point
7 across I believe.

8 (Laughter)

9 MR. BROOKMAN: What an
10 anticlimax.

11 MR. SHEBIK: Sorry about that.

12 MR. BROOKMAN: Thanks, Ron.
13 Okay.

14 MR. SHEBIK: Thank you.

15 MR. BROOKMAN: So, do we have
16 additional comments regarding this revised
17 LAPT definition?

18 MS. WIDDER: And I would say
19 specifically on the case of -- or in the case
20 of remote cases with no thermostat which we
21 were just discussing, if there are specific
22 comments about a better, or more clear, or

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1 more consistent approach to describing the
2 lowest application product temperature for
3 those cases that's different than what is
4 already on the books the DOE welcomes comment
5 on that.

6 Okay, moving on then.

7 MR. BROOKMAN: Neshan, did you
8 have something there? Neshan.

9 MR. NESHAN: Neshan, Southern
10 Store Fixtures.

11 MR. BROOKMAN: I could see the
12 wheels turning.

13 MR. NESHAN: Yes. But for the
14 record most remote refrigerated display cases
15 go out of the factory without a thermostat on
16 them. I mean, it's hardly -- really
17 exception to have a thermostat on a remote
18 case.

19 MR. BROOKMAN: Really?

20 MS. WIDDER: Yes, but I also have
21 another --

22 MR. BROOKMAN: The remotes.

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1 MS. WIDDER: So I have a follow-
2 up question. I understand that, but my
3 understanding is that most remote cases can
4 also meet their rating temperatures. That
5 it's unusual for remote cases to be designed
6 such that they cannot meet the rating
7 temperatures because of the flexibility in
8 the condensing unit.

9 MR. NESHAN: Well, if they cannot
10 meet the rating then you're in trouble.

11 MR. ANDERSON: Tim Anderson.
12 There are some low-temperature cabinets which
13 are limited in terms of the evaporator and
14 air flow, open cases typically. But you're
15 right that the condensing unit side is
16 typically never an issue until you get down
17 to, you know. So it's more components in the
18 case could be where your LAPT may be 8 rather
19 than zero on a few cabinets.

20 MS. WIDDER: Okay. Yes, that was
21 just -- I mean anyway, just wanted to clarify
22 that.

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1 MR. BROOKMAN: You got that?

2 MS. WIDDER: Yes, I got it.

3 Thank you very much.

4 MR. BROOKMAN: Moving on then.

5 MS. WIDDER: Okay. And now
6 Ashley is going to talk about TDA and AHRI
7 interpretation.

8 MS. ARMSTRONG: Okay. So as I
9 mentioned at the beginning of the webinar we
10 got some preliminary questions and comments
11 before today's public meeting about TDA.

12 So, I assume that everyone has
13 read the proposal for TDA, DOE's
14 clarification. So let me step through this
15 real quick.

16 One is that I just want to make
17 clear something. This has a little bit to do
18 with this, but it's a little broad.

19 A number -- we understand that
20 we've incorporated by reference portions of
21 industry standards. Some of those are ASHRAE
22 standards, they may be AHRI standards, they

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1 may be AHAM standards in the case of volume.

2 We do want to clarify though,
3 unless the Department has actually issued
4 guidance through our formalized guidance
5 process the guidance doesn't count for the
6 federal test procedure.

7 So if one of those organizations
8 decides to answer questions or issue guidance
9 the way to get it into the test procedure
10 would be to present it to DOE to move through
11 DOE's guidance process.

12 Just because the guidance has
13 been adopted either as an ASHRAE addendum if
14 there is such a thing or an AHRI guidance
15 document, it doesn't count for the purposes
16 of DOE testing unless DOE has officially
17 adopted through its guidance process and says
18 it must be used. So I do want to clarify
19 that.

20 If you have questions about the
21 federal method of test once it becomes a
22 federal method of test we would work closely

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1 with ASHRAE in resolving them, we would
2 closely with AHRI and everyone else, but they
3 need to go through the formalized process at
4 that point. Okay?

5 So, we know that there's five
6 interpretations out there that AHRI has
7 issued. I'm not going to go through them
8 here because I think a TDA discussion is more
9 useful at this point and you have our
10 positions on them.

11 And now I'm going to move to the
12 slides you don't have. I apologize you don't
13 have them in advance. I've taken out the
14 next set of slides to show you some
15 illustrations.

16 So, we've gotten a lot of
17 questions with regards to TDA in terms of how
18 certain links are calculated for the purposes
19 of TDA measurement.

20 So, you don't have these in your
21 document. We will make them available right
22 after the public meeting so that you do have

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1 a copy.

2 But I wanted, for the purposes of
3 discussion I wanted to present to you four
4 different scenarios and start a discussion
5 about TDA.

6 So, scenario 1 shows -- I'm going
7 to present all four and then I welcome your
8 feedback. Scenario 1 shows a case with the
9 wall flush with the visible area. So you can
10 see we have presented three different ways
11 that the lengths could be calculated.

12 It could be the boundary of the
13 refrigerated volume edge to edge. It could
14 be B which is the entire continuous length
15 which would be including the mullions. Or it
16 can be C + D + E which is actually the sum of
17 the lengths of the visible areas only. So
18 I'm going to go to the next example.

19 So, why this matters is because
20 we've come across -- we understand this is
21 the way most commercial refrigeration
22 equipment is designed with the boundary of

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1 the refrigerated volume fairly flush with the
2 glass. And the mullions are minimized such
3 that you really are maintaining as much
4 visible area as possible because you're
5 trying to sell product. So when I go to the
6 next scenarios keep that in mind.

7 Scenario 2. This is where the
8 visible area is almost inset from the
9 boundary of the refrigerated volume. So
10 there's a difference. It almost comes around
11 and overlaps and then the glass inlays a
12 little bit.

13 So you can calculate length a
14 couple of different ways. One would be the
15 inside wall to the inside wall of the
16 refrigerated volume. That is larger than the
17 actual glass.

18 You can calculate it by B, the
19 entire continuous length containing the
20 visible area only. That would include the
21 mullions though.

22 Or you can do C + D + E which is

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1 the sum of the lengths just of the visible
2 area. I think you know our proposal is C + D
3 + E, by the way.

4 So, this case is a little bit of
5 an oversize, egregious case. Because I
6 realize that as a commercial refrigeration
7 equipment manufacturer you're probably trying
8 to maximize your visible area to sell
9 product. But I wanted to show an example of
10 why this matters from the Department's
11 perspective.

12 So, for this one it's the same
13 scenario too except for they have a really
14 big mullion in the middle, like really big.
15 And assume for the purposes of discussion
16 that's a composite, it's foamed and it's
17 just, you know, almost as big as one of the
18 windows.

19 So then for this we have three
20 ways of calculating TDA. Should it be the
21 boundary of the refrigerated volume once
22 again? Should it be the continuous length of

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1 the visible area which would include the
2 mullion? And in this case that's a very
3 large portion. Or should it really just be
4 the sum of the visible areas?

5 And then I'm going to go through
6 scenario 4. And this is where the glass
7 actually overhangs the refrigerated volume.
8 So the internal is smaller than the glass
9 itself, the refrigerated space. So the
10 boundary of the refrigerated volume fits into
11 where the glass is.

12 And for the purpose of this the
13 entire continuous length of visible area
14 would actually be larger than the
15 refrigerated volume itself. And then
16 obviously you can see the two ways to
17 calculate just the visible areas.

18 So, I understand it may be hard
19 because you don't have these slides in front
20 of you, but when the Department was coming
21 out with an interpretation or its proposal
22 these are the scenarios we were trying to

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1 think of. And so this is what we would like
2 your feedback on. Because I understand that
3 people may have a lot of feedback on what we
4 should do.

5 MR. BROOKMAN: Okay, and maybe
6 when you comment you can refer to the
7 scenario that you wish to comment on. Who'd
8 like to start? Tim? Which scenario?

9 MR. ANDERSON: Go back to the
10 first one. Tim Anderson, Hussmann. The
11 point that I would like to make and that I
12 was trying to illustrate with the exhibit
13 that we submitted was not so much that we
14 have a problem with using one method versus
15 the other.

16 It's that when the standard
17 levels were set and the proposed standard
18 levels were created for let's call it the
19 2017 rule that essentially the first one,
20 length A, was used in all of those analyses.

21
22 So, you've already used this

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1 method for setting your standard levels. If
2 you are going to change it, that's fine,
3 let's agree on a way to change it, but you
4 also have to revise the standard levels
5 accordingly.

6 If you subtract 10 percent of our
7 TDA from our case you have to adjust the
8 standard levels so that we're not unfairly
9 penalized. That's the point that I want to
10 make.

11 MS. ARMSTRONG: Right. So, I'm
12 going to go on the record saying the
13 Department will not adjust TDA in a manner
14 that will increase the stringency of the
15 standards you are required to meet today.

16 Now, what we want to get out of
17 the discussion is what should TDA actually
18 be. What is the best method that TDA -- how
19 should TDA really be calculated?

20 So I'm going to turn the question
21 a little bit in the sense that we get the
22 standards point. We will deal with that.

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1 But with my examples do you see
2 the differences?

3 MR. NESHAN: Yes, Ashley.
4 Neshan, Southern Store Fixtures. I mean,
5 this obviously is very typical of a
6 commercial refrigeration door cases
7 manufactured in the United States and other
8 places as well.

9 The second one that you had, this
10 is really the only place, and Bruce mentioned
11 you have seen this is when you have an ice
12 storage or one of those units you see outside
13 of a gas station in the self-ice in plastic
14 bags. You would see a door and then the
15 insulated on either sides.

16 And then the last one, the fourth
17 one that you were showing, this one, I've
18 never seen anything like this because I don't
19 think anybody wants to open a door and then
20 be in a non-refrigerated area because that
21 would be a very, very difficult -- really
22 you're penalizing yourself and it's not a

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1 very good design.

2 But typically that number 1 is
3 what everybody is familiar with. Our
4 equipment is manufactured that way.

5 And by the way, this does not
6 only apply to the door type cases. I mean,
7 I'm talking about the reach-in door cases.
8 It is also applicable to service over counter
9 where you have the sliding doors in the back.

10 MS. ARMSTRONG: Yes, it's going
11 to apply there.

12 MR. NESHAN: So it's -- and there
13 are other equipment very similar to it.

14 So, the -- in my opinion the best
15 way to do it is what we have been doing so
16 far and how it was -- the TDA was calculated
17 when the 2008 calculation was put together,
18 to stay with that, how it was defined, and
19 that would have been A, the first version,
20 whatever.

21 MS. ARMSTRONG: So, how do you
22 reconcile that with the definition of TDA

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1 includes the projected areas for visible
2 product? What do we do with A there?

3 MR. NESHAN: I don't know who
4 would make a case like that.

5 MS. ARMSTRONG: But we have to
6 write regs that are very clear and meet the
7 intent of the projected areas -- meet that
8 definition.

9 MR. NESHAN: This is Neshan. I
10 don't have an answer because I've never seen
11 anything like this.

12 MS. ARMSTRONG: Right. I mean,
13 it's a tense point, right? I mean, the
14 reason you see the difference there is
15 because the mullion area really is about 10
16 percent. That's why you're seeing a
17 difference.

18 And the question becomes does the
19 mullion area really meet the intent of the
20 TDA definition which is projected areas for
21 visible product. I'm asking. It's a
22 question.

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1 MR. BROOKMAN: Yes, Bruce.

2 MR. HIERLMEIER: Bruce from Zero
3 Zone. I mean, I think when we started
4 looking at TDA a long time ago we never got
5 really good correlation actually in the data.
6 And we looked at our competitors' cases as a
7 group and all that and said all right, how
8 does TDA really compare to the energy use and
9 shouldn't we be using volume for remote cases
10 and all, and what about the depth of the
11 case? Do you get a benefit if you've got a
12 deeper case?

13 And it was kind of one of those
14 you negotiate, you look at and say all right,
15 we're just going to do TDA and we're going to
16 do the length of the case. So we don't have
17 a lot of engineering data to point out what's
18 the difference in energy level for scenario 3
19 which you think would be a lot because you
20 could have an insulated panel, doesn't have
21 any glass heat, doesn't have any radiated
22 components or anything. But we don't have

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1 good numbers to tell you how much to add or
2 cut out of that to regulate against it even.

3 MS. ARMSTRONG: Well, I think
4 that's a different question, right? It's
5 more the question of if we were -- we are
6 providing guidance, more details about how
7 TDA should be calculated. And the definition
8 of TDA is projected areas for visible
9 product. What should that guidance say?

10 I mean, are mullions are visible
11 product? Please speak. I mean, this is
12 meant to be a discussion.

13 MR. SCHRINER: Arneg USA, Nick
14 Schriener. It depends on how close you are to
15 the product. Because if you can get close
16 enough you can see this. Are you talking a
17 10-foot straight on view?

18 MS. ARMSTRONG: I mean, it also
19 depends on how big those mullions are,
20 correct? If you have on that's 3 feet wide,
21 don't know why you would do that, but if you
22 have one that was 3 feet wide I would argue

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1 you may not be able to see visible product on
2 the other end ever.

3 MR. BROOKMAN: Bruce.

4 MR. HIERLMEIER: Well, when we
5 were looking at these interpretations at AHRI
6 we had toyed with, all right, you're going to
7 put a person in front of the door. And we
8 were actually looking at the vertical ones.

9 And we were like, all right, what
10 if you had an angle and you said that person
11 could look up 30 inches from this point and
12 anything that you could project and see from
13 that location would be considered visible
14 space.

15 Ultimately vertically we said no,
16 we're just going to go direct in
17 horizontally. But we had looked at, sort of
18 to Arneg's point, you know can you look
19 sideways at it. At a certain distance out,
20 at a certain position in front of that
21 opening what can you see sideways? Anything
22 you can see sideways you get to consider as

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1 display area.

2 Things you can't see -- so like
3 if B was wide, 6 feet wide, odds are you
4 can't stand in front of it and see 3 feet to
5 the side. But maybe you'd get, you know,
6 another 10 or 12 inches, whatever you might
7 be able to see. So, I mean that would be one
8 method is you pick a point, you put some
9 dimensions on it and that allows you to get
10 beyond normal mullions.

11 MS. ARMSTRONG: So, I agree, that
12 is one method. That is a little subjective,
13 right? Somebody would have to make the
14 determination of what you could see and what
15 you can't. Sure.

16 MR. ANDERSON: So, just
17 brainstorming. Tim Anderson, Hussmann. What
18 if you used, and going back to the first one
19 again, what if you used A but set a threshold
20 for the amount of the thickness of the
21 mullions that could be excluded?

22 You know, so you said A is the

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1 length of the case unless, you know, the
2 thickness of these mullions is greater than
3 15 percent of the overall A dimension,
4 something like that. That may be a way to
5 try to avoid the situations like you show in
6 I think it was scenario 3.

7 MS. ARMSTRONG: Yes. So, we
8 could do that. That's definitely an idea. I
9 would argue you should use B. In your case A
10 and B are the same for your standard cases.

11 Where B helps us is when you have
12 the wraparound. And if you have a wraparound
13 like you were explaining with the ice chest
14 there is a difference there. And B would get
15 you to what your mullion issue.

16 We could -- I mean this really --
17 scenario 1, 2, 3 and 4 was meant to generate
18 ideas and a discussion. Our proposal was C +
19 D + E.

20 MR. BROOKMAN: Say why.

21 MS. ARMSTRONG: I think that was
22 the only way that -- well, A, you know, it

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1 says projected areas for visible product, and
2 B, you know, when you're just counting the
3 glass minus the mullions you don't have to
4 rely on an interpretation of can I see, can I
5 not see, depending on how thick the mullion
6 is, what's the materials of the mullions,
7 whether it's insulated or not. You don't
8 have to worry about those kinds of things.
9 It's just the glass.

10 MR. BROOKMAN: Charlie.

11 MR. HON: This is Charlie Hon.
12 There's also another set of scenarios that
13 are even -- along with up and down
14 directions, you know, you have a horizontal
15 and a vertical direction which is not even
16 included in your slides here.

17 But also, if you use the pictures
18 and the descriptions in a lot of open cases
19 you lose part of your visible display because
20 a lot of open cases have a 6- to 12-inch
21 ridge built up to capture the cold air
22 falling down.

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1 MS. ARMSTRONG: Right.

2 MR. HON: And then you lose all
3 that as well. So that would go the reverse
4 direction. Because if some of these other
5 areas are discussed like the A scenario on
6 that you would actually increase the internal
7 display area for that unit.

8 MR. BROOKMAN: Sarah?

9 MS. WIDDER: So, just to follow
10 up on Charlie's point. That is -- so these
11 are only discussing length. The height
12 measurement is also addressed in the AHRI
13 interpretations and pretty clearly in the
14 diagrams that are in Appendix D.

15 There's also some diagrams that
16 the Department proposed to include in the CFR
17 that help define H.

18 And the C + D + E method -- and
19 actually if you go to scenario 4 it's
20 actually F + G + H is the Department's
21 proposal. And that's consistent with the
22 Department's proposal for height.

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1 So it would be height is in your
2 case where there was that either a part of
3 the air curtain or something that comes up
4 over the display area you start from that to
5 what you can see.

6 And that's consistent with AHRI
7 that it really is the projected height
8 dimension. And so part of the reason
9 Department proposed this for the length
10 dimension is it's consistent in both
11 dimensions.

12 MS. ARMSTRONG: Right.

13 MR. BROOKMAN: Let me ask as an
14 attempt to obtain some clarity, what's the
15 downside in the Department's proposal CDE?
16 From the manufacturing perspective. Yes,
17 Nick.

18 MR. SCHRINER: I believe that --
19 didn't you already address that?

20 MS. ARMSTRONG: As long as we
21 addressed his point. I mean, the Department
22 is going on the record saying that --

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1 MR. BROOKMAN: Some percentage of
2 mullions, whatever.

3 MS. ARMSTRONG: No, no, no. I
4 mean he's saying that the standard -- we
5 can't by default --

6 MR. BROOKMAN: Oh, yes, right.
7 Gotcha.

8 MS. ARMSTRONG: So as long as we
9 address that issue do we think that this is
10 the most clear and objective and equal way to
11 go.

12 MR. BROOKMAN: Nick.

13 MR. SCHRINER: Another downside
14 is a manufacturer could have bigger doors
15 than their actual refrigeration area.

16 MS. ARMSTRONG: That's 4. So you
17 wouldn't be able to count that. It would be
18 F + G + H.

19 MR. HON: This is Charlie Hon.
20 Door variance -- because if you're fairly
21 wide door framing, you actually cover more
22 than the mullion, you would be extended

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1 beyond the edge of the mullion with your door
2 frame. You can do that, we do in some areas,
3 which would further change the dimensions up
4 there. Because is it actually the glass, or
5 is it the mullion?

6 MS. ARMSTRONG: It's the glass in
7 our proposal.

8 MR. HON: And that would include
9 the framing of the doors becoming a component
10 as well.

11 MS. WIDDER: No, I'll clarify.
12 It's not the glass. In that example it's the
13 projection of visible area.

14 MR. HON: Straight line?

15 MS. WIDDER: Straight line.

16 MS. ARMSTRONG: Yes, straight
17 line.

18 MS. WIDDER: What you can see
19 through.

20 MS. ARMSTRONG: Yes.

21 MR. HON: Which would include
22 mullion, glass -- I mean door frames,

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1 whatever it would be, whatever it is
2 obstructing the view is straight through.

3 MS. ARMSTRONG: Yes.

4 MR. BROOKMAN: Bruce.

5 MR. HIERLMEIER: I think what's
6 challenging is the one that has the really
7 wide mullion, if they're all the same volume
8 cases would use the least amount of energy
9 but would also be the least likely to be able
10 to pass probably because you don't account
11 for anything in the back wall, bottom, or
12 ceiling to allow it to have some energy.

13 So you could wind up sort of an
14 odd scenario that if manufacturers started
15 saying we're going to put smaller doors on to
16 save energy you actually can't pass the test
17 by saving energy because of the back wall and
18 ceiling doesn't get any additional allowance
19 let's say. So you'd have to be careful with
20 the formulas, how that would work out.

21 MS. ARMSTRONG: So, I'm not sure
22 we're going to come to agreement. But if you

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1 have ideas, like I said, what I wanted to do
2 with this when I was thinking last night to
3 give you some background behind the
4 Department's thought process. That's why we
5 drew these diagrams.

6 Ultimately we led to the proposal
7 that's in the rule today. But if you have
8 any comments on that we welcome that.

9 MR. BROOKMAN: Yes, we're seeking
10 clarity here, to be clear, and not agreements
11 at this point. So, additional thoughts and
12 any written comments specifically. Bruce?

13 MR. HIERLMEIER: Well, to address
14 the question I had, would the DOE entertain
15 sort of a more complex formula where you have
16 a TDA component for energy, but then you have
17 another component for non-TDA space or volume
18 or length?

19 So that would account -- this guy
20 says all right -- it's almost like building
21 two transparent door cases and a solid door
22 case in that one really big one. So if you

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1 said, all right, you get this extra component
2 for your solid stuff maybe then it helps
3 cover unique designs.

4 MR. BROOKMAN: Do these designs
5 happen very often, these odd --

6 (Laughter)

7 MS. ARMSTRONG: It was my caveat
8 when I presented the slide.

9 MR. BROOKMAN: It doesn't help
10 you sell product, right? It doesn't maximize
11 use of space.

12 MR. HIERLMEIER: Ice cases are
13 sort of built like that, but a lot of them
14 are self-contained when they're built like
15 that. They have a small door. You open it
16 up and you can reach. About the only product
17 I've seen.

18 MR. BROOKMAN: Yes.

19 MR. NESHAN: Neshan, Southern
20 Store Fixtures. Just one cautionary note.
21 If you go back to the first case, if we were,
22 I mean just for the sake of discussion, if we

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1 were to eliminate the mullions what would
2 stop us from also eliminating where there is
3 no product, basically there is shelf, you
4 know, for edge of the shelf.

5 There is no product in there,
6 right? The edge of the shelf where you have
7 all the shelves in the display case. There's
8 no product where the shelves are. So you
9 have a piece of metal that really is not
10 usable space.

11 Also, in the inside, on the end
12 panels when you have a glass end panel all
13 these shelves have their solid area that you
14 can't display product. So who says that we
15 cannot eliminate those?

16 See, it becomes very complicated
17 trying to calculate these things. It becomes
18 really we have to sit down on a daily basis,
19 do nothing but these kind of calculations
20 which is really not the intent of I'm
21 assuming this standard.

22 MR. BROOKMAN: Joe Sanders would

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1 like to speak. Joe, welcome. Unmute your
2 phone and speak clearly.

3 MR. SANDERS: I looked at the
4 formulas. If these were all solid doors we
5 would use volume to calculate energy
6 consumption. Why wouldn't we do the same
7 thing for glass door remotes? Instead of
8 going through all this TDA discussion.

9 MR. BROOKMAN: Sarah.

10 MS. WIDDER: Well, that's related
11 -- so the standard, the current standard that
12 we have for remote transparent cases is based
13 on TDA. So, if the Department continues to
14 regulate based on a TDA metric in the
15 standard the test procedure must provide a
16 method for calculating that dimension.

17 MR. SANDERS: I hear you. I'm
18 listening carefully. But if that's such a
19 huge discussion point why don't they just
20 simply switch to volume based upon a formula
21 for remote transparent door cabinets like we
22 do for self-contained and like you're doing

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1 for remote solid door.

2 MS. ARMSTRONG: So I think the
3 simple answer is that could be a way for the
4 future. That's not going to be a way to fix
5 all the questions we get now.

6 Bottom line is we have TDA now
7 for the current standards and honestly, for
8 the proposed ones. So we need at least a
9 method to clearly identify how TDA should be
10 measured now to the extent it's not already
11 clear in our regs. And then if we decide to
12 move to volume in the future we could
13 consider that.

14 MR. SANDERS: One final comment.

15 MR. BROOKMAN: Please, Joe, go
16 ahead.

17 MR. SANDERS: One final comment
18 and I'll go. And this may be pretty much --
19 if volume is calculated on three dimensions
20 why don't we -- for glass, and I'm only
21 talking about glass door cases. Why don't we
22 calculate TDA based on a two-dimensional area

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1 which goes wall to wall, top to bottom as if
2 you were calculating volume? And forget
3 about what we're trying to do with mullions.

4 Just leave TDA as a square footage
5 calculated wall to wall, top to bottom
6 without the third dimension depth involved.

7 MS. ARMSTRONG: I mean, my answer
8 is going to be I do think that's what some
9 people are doing now. I'm not clear that
10 that's what -- that isn't what we proposed,
11 but it has come to our attention that that is
12 what some people are doing now. That's not
13 what everyone is doing now.

14 MR. SANDERS: We don't make a lot
15 of these cases, you know, probably next to
16 about none. But to me that makes the most
17 logical sense to step from a two-dimensional
18 calculation which TDA is to a three-
19 dimensional calculation down the road. So
20 anyway, that's my comment and thank you very
21 much.

22 MR. BROOKMAN: Thank you, Joe.

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1 Thank you, Charlie.

2 MR. HON: Charlie Hon. During
3 the original proposals, the original review
4 of these product classes when the first NOPRs
5 were published that was an item of
6 discussion. But the only thing -- the
7 problem was there was no database other than
8 TDA information. And so they went with the
9 industry standard for the grocery store type
10 of equipment which is TDA.

11 MS. ARMSTRONG: Yes, I mean I
12 think really, I mean one of the reasons we
13 have said in the past that we went with TDA,
14 I mean that's kind of the metric you guys use
15 to sell your equipment, visible area, right?

16 I mean, that's at least our understanding of
17 it.

18 You're not putting in your
19 marketing literature refrigerated volume.
20 It's how much -- or you may be as well, but
21 you know, it's how much can I see through it.

22 What can I see my product?

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1 Safeway doesn't really care how
2 many yogurts you can see. They want to know
3 -- at least depth-wise. They want to know
4 from the front of it what is all that my
5 customer will be able to see and hopefully
6 purchase. I might have gotten that wrong,
7 but.

8 MR. BROOKMAN: Bruce?

9 MR. HIERLMEIER: Bruce from Zero
10 Zone. Also, Europe was doing TDA at the
11 time. So when AHRI got going on it is sort
12 of looking across the pond and what do they
13 do, and oh, okay. You know, again, not a
14 great solution but our best solution at the
15 time.

16 MR. BROOKMAN: Neshan.

17 MR. NESHAN: Neshan, Southern
18 Store Fixtures. You ask what would be
19 recommended. What should be used at least
20 for time being would be what was used to
21 originally come up with the different levels
22 of energy consumption when it was done in

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1 2008. I mean, we should continue that which
2 is basically what you have in case 1 and
3 which is very also similar.

4 And I think your calculation in
5 2008 is a little bit more liberal compared to
6 what AHRI has. Because AHRI has restricted
7 at least the height from the top and the
8 bottom. They put some restriction in the
9 doors. But the length, still this.

10 MR. BROOKMAN: You're saying A.

11 MR. NESHAN: A, correct. Use --

12 MS. ARMSTRONG: Do you still
13 believe it's A in this one?

14 MR. NESHAN: Not this one, no,
15 no.

16 MS. ARMSTRONG: You believe it's
17 B.

18 MR. NESHAN: No. Let me -- the
19 way that it was done in 2008, the engineering
20 analysis was the length of the case was used.

21 The L, if I recall in the door cases, 12.7
22 dimension was used which is A and not the B

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1 dimension.

2 I mean, you can go, and I have a
3 copy of it if you want for those who are
4 interested. The dimension that was used for
5 calculating, or at least coming up with the
6 analysis as to what TDA should be. And
7 dimension A was used.

8 MR. BROOKMAN: It seems like this
9 is an opportunity to revise that if we wanted
10 to, if you wanted to do it.

11 I'm wondering if, just to ask
12 another practical question, is there some
13 recommendation here that makes it easier for
14 the industry, that is significantly easier to
15 implement?

16 MR. NESHAN: Neshan, Southern
17 Store Fixtures. Yes. As I said use the 2008
18 method of calculation. Also, what is in AHRI
19 standard 1200.

20 MR. BROOKMAN: Okay. Nick,
21 you're shaking your head. You agree? Does
22 that solve your --

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1 MS. ARMSTRONG: I'm not saying
2 the Department agrees.

3 (Laughter)

4 MR. BROOKMAN: But I'm -- you can
5 imagine the Department here is looking for
6 something, I believe, that has a lot of
7 breadth of application, right? That's going
8 to meet a lot of different conditions --

9 MS. ARMSTRONG: That is one way.

10 MR. BROOKMAN: -- as they emerge,
11 right? That's going to -- go ahead.

12 MR. HIERLMEIER: I mean there's
13 some things that customers go in and out of
14 favor. We used to build our cases like
15 scenario 2 and got pushed out of the market
16 with that design. It just, customers didn't
17 want to have spaces, you couldn't see through
18 the glass door and all that. So we modified
19 our design 15 years ago to account for it.

20 But customers change. They may
21 decide they like this if it saves an extra,
22 you know, 1 percent on energy. But that's

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1 what -- some of these would just be customer
2 driven. There wouldn't be a lot of sales at
3 least initially because it wouldn't meet the
4 other customer needs of displaying and
5 selling food perhaps.

6 So if you left it as is, some of
7 the other ones would be less frequent. They
8 may get out in the marketplace and may have a
9 benefit on their energy because they've got
10 a big fat mullion.

11 MR. BROOKMAN: Let me go in a
12 different direction with this. So are any of
13 these proposals, are any of them just much
14 worse than the others that the industry would
15 not like to see? Charlie.

16 MR. HON: Charlie Hon. Just
17 basic numbers there. The industry -- we're
18 not heavily involved in this so I'm an
19 outsider looking in. We have very, very
20 little TDA-type equipment other than open
21 cases. But -- and continuous cases is the
22 big issue here.

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1 But I'm one that believes that if
2 we did it in 2008, whether it be A or B, or
3 CDE, that's where the number was generated
4 from so just stick with it.

5 MR. BROOKMAN: Tim?

6 MR. ANDERSON: Tim Anderson. For
7 VCT display cases for supermarkets the
8 industry wants the first one where the total
9 display area is maximized.

10 MR. BROOKMAN: A.

11 MR. ANDERSON: Yes. Well, the
12 first figure where you're not -- you don't
13 have excessive blocking of the visible
14 display area.

15 MR. BROOKMAN: And within figure
16 1.

17 MR. ANDERSON: Yes. They're in
18 the business of selling food, not necessarily
19 saving energy. They want to sell food. So
20 we are constantly under pressure to minimize
21 the mullions as much as possible.

22 Now, I'm not necessarily speaking

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1 to service over counter equipment or other
2 things. But for VCT equipment we're always
3 under pressure to minimize those non-visible
4 areas.

5 MR. BROOKMAN: So then on this
6 scenario 1 are you an A, B, or CDE advocate?

7 MR. HON: Charlie Hon. I think
8 you need to go to scenario 2 because A and B
9 are the same.

10 MS. ARMSTRONG: So, the idea here
11 is that when we provide some type of guidance
12 it's going to be applicable to all.

13 And I realize that 99.5 percent
14 of the cases may look like this. But is it
15 fair to have someone do A here where all of
16 you have A and B the same? Or should it be B
17 where really for typical cases it makes no
18 difference? It's the same. Your glass is at
19 the edge of your refrigerated volume.

20 But for those who opt to make a
21 design where your refrigerated volume is
22 different from the edge of your glass the

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1 definition of TDA clearly says visible
2 product area.

3 MR. BROOKMAN: Bruce.

4 MR. HIERLMEIER: Actually, none
5 of our cases that are joined together in the
6 field are scenario 1 because all the doors
7 have mullions. So the mullion, the edge of
8 the door may get very near the edge of the
9 case, but we'll still -- that glass will
10 still get inset an inch and a half or so on
11 each side.

12 So really scenario 2 is, although
13 it's drawn a little fat, but that's really
14 what we see with the edge of the door
15 typically would go out to A.

16 MR. BROOKMAN: So that means it
17 should be B?

18 MS. ARMSTRONG: I don't think
19 your refrigerated volume though is -- right?

20 I mean, your refrigerated boundary of your
21 volume, doesn't that match up with --

22 MR. HIERLMEIER: No.

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1 MS. ARMSTRONG: It doesn't?

2 MR. HIERLMEIER: Because the door
3 has to be at the edge of the case and the
4 glass starts in an inch and a half, inch and
5 three quarters.

6 MS. ARMSTRONG: Okay.

7 MR. HIERLMEIER: So ours is more
8 like number 2 with that line pressed up
9 against that black edge of the door.

10 MS. ARMSTRONG: Okay.

11 MR. HIERLMEIER: In the industry
12 I should say, really. For connected cases.

13 MR. BROOKMAN: B.

14 MR. HIERLMEIER: A. We use A,
15 but A is closer. It's up against the edge of
16 the door.

17 MR. BROOKMAN: Okay.

18 MS. ARMSTRONG: Okay.

19 MR. BROOKMAN: Any additional
20 thoughts on this before we move on? Okay.
21 Laura, did you want to?

22 MS. ZELINSKI: I would say --

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1 Lauren, AHRI. I would say that I would agree
2 with the A that we currently have.

3 But if we were going to go away
4 from that and change some of the calculations
5 I think that the percentage of mullion might
6 be a good way to go from AHRI's perspective.

7 You know, to consider that A volume or TDA
8 that we currently have, but then take away
9 what was overlaying the refrigerated space
10 and the mullions from inside.

11 MR. BROOKMAN: Okay, thank you.
12 Please.

13 MS. BARHYDT: Laura Barhydt, DOE
14 enforcement. Two related thoughts.

15 One, everybody laughed pretty
16 hard at scenario 3 and Ashley drew it more
17 dramatic to make the point. But we have
18 actually seen a case with a very large
19 mullion in the middle. So it's not that
20 large and it's not those percentages, but
21 it's not a little line either. So keep that
22 in mind when you think about in drafting your

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1 comments that that's an extreme case but it's
2 not out of the realm of possibility. It's
3 not something that's just completely.

4 MS. ARMSTRONG: I will say we
5 drew these -- we've seen all of them.

6 MS. BARHYDT: Yes.

7 MS. ARMSTRONG: So, the market
8 may not like them, but they're there.

9 MS. BARHYDT: And then the
10 related thought is that what I'm hearing is a
11 lot of people say we make scenario 1. A fits
12 scenario 1. We should stick with A.

13 And what we're saying is we agree
14 most of the market is scenario 1, but it's
15 not all of the market. And so how should it
16 be calculated for scenarios 2, 3 and 4? They
17 do exist. And so should it be scenario --
18 option A for all of those scenarios?

19 I know that that was the
20 assumption that when this was originally
21 written was that A and B would be pretty much
22 equal, but they're not in all cases. And so

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1 what do you do in those cases where they're
2 not equal?

3 And what -- I think that what
4 I've heard is that when you drafted it in
5 2008 and you said A and B are pretty much
6 equal we're assuming that projected display
7 area is equal to the length.

8 But what happens when they're
9 not? And you're making that assumption. So
10 how do we interpret projected visible area
11 where that's not the case?

12 MR. BROOKMAN: Okay, thank you.
13 Additional comments before we move on.

14 So, really the Department needs
15 your best thinking in your written comments
16 here.

17 MS. ARMSTRONG: So, we've kind of
18 touched on this throughout the day. This is
19 just a really quick overview.

20 What we did was we bifurcated the
21 existing test procedures into two appendices,
22 Appendix A and Appendix B. Appendix A will

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1 be required to be used 30 days after
2 publication of any test procedure final rule.

3 Appendix B is compliance state of future
4 standards. So, as Tim likes to call it,
5 2017-ish. And so just to make that clear.

6 Charlie, do you want to do this
7 part?

8 MR. BROOKMAN: Yes. Neshan.

9 MR. NESHAN: Ashley, one question
10 I have. Obviously the slides that you did
11 not show. I mean, and this one.

12 MR. BROOKMAN: What number is it,
13 Neshan?

14 MR. NESHAN: This is 70.

15 MS. ARMSTRONG: Figure H.

16 MR. NESHAN: Yes, the lower one,
17 the one that is kind of a semi horizontal.

18 MS. ARMSTRONG: Yes.

19 MR. NESHAN: The way this arrow
20 is shown, obviously it's not an engineering
21 drawing, but it seems that that arrow needs
22 to be pointing to the bottom of the

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1 transparent product stop and not necessarily
2 to the middle point.

3 MS. ARMSTRONG: I think that's
4 why we pointed out that that's where it
5 stops.

6 MS. WIDDER: That's the intent.

7 MS. ARMSTRONG: Right.

8 MR. NESHAN: Going to the bottom.

9 MS. ARMSTRONG: Yes.

10 MR. NESHAN: Another way of doing
11 it, to be honest with you, going to the top
12 and then coming down. Depending how you want
13 to, you know.

14 MS. ARMSTRONG: That's why that's
15 there. Right? So it's a -- because clearly
16 that's where it stops.

17 MR. NESHAN: Yes, I know. But
18 I'm saying that this could also could have
19 easily been done. This is one area. This is
20 another one.

21 MS. ARMSTRONG: Right. I got it.

22 MR. NESHAN: Two different ways

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1 of doing it. Thank you.

2 MR. BROOKMAN: Thank you.

3 MR. LLENZA: This is Charles
4 Llenza, Department of Energy. Just can you
5 put that in your comments? Since you made
6 comments here. Thank you.

7 MR. BROOKMAN: Okay. So, I think
8 that's all that the Department intended to
9 cover. Charles Llenza, do you wish to make
10 closing remarks?

11 For my part, thank you all. This
12 was a very productive meeting. We covered a
13 lot of ground here very efficiently.
14 Charles.

15 MR. LLENZA: I'm glad that you
16 guys attended and we appreciate the comments
17 presented today.

18 We also want to remind everybody
19 that written comments are the best for the
20 Department so that we can document and then
21 respond to all your comments accordingly.

22 I wanted to provide here on this

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1 slide the CRE TP web pages and the DOE
2 contacts. As you can see the web page is up
3 on the top and the commercial refrigeration
4 equipment test procedure web page is the
5 second web page.

6 I can be contacted for commercial
7 refrigeration issues at that link. And then
8 Ashley Armstrong's email address is there for
9 contacting her.

10 I also wanted to just go back to
11 the method of providing comments and remind
12 everybody that to provide the docket number
13 and the RIN number, and to use the -- what we
14 have put here on how to submit comments for
15 the comments for the test procedure.

16 And once again, also to remind
17 parties that January 13, 2014 is the comment
18 period closing date. So thanks for
19 attending.

20 MR. HIERLMEIER: I had trouble
21 with the email address --

22 MS. ARMSTRONG: Yes, it was like

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1 the difference between --

2 MR. BROOKMAN: Okay, thanks
3 Bruce.

4 MR. LLENZA: If you have any
5 problems use my email address and just
6 contact me on any of these and I'll make sure
7 everything is running properly. It should be
8 running properly at this point.

9 MR. BROOKMAN: Yes, Bruce.

10 MR. HIERLMEIER: Are we going to
11 have the slides here that are new? Are you
12 going to email them all to us?

13 MR. LLENZA: They will be posted
14 as soon as we get back to the office, yes.

15 MR. BROOKMAN: So thanks again.
16 Safe travels to everyone. Hope you make it
17 home before the snow.

18 (Whereupon, the foregoing matter
19 went off the record at 12:52 p.m.)
20
21
22

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Commercial Refrigeration Equipment
Notice of Proposed Rulemaking

Before: US DOE

Date: 12-05-13

Place: Washington, DC

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