

UNITED STATES DEPARTMENT OF ENERGY

**PUBLIC MEETING ON ENERGY CONSERVATION PROGRAM FOR
CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT: TEST
PROCEDURES FOR METAL HALIDE BALLASTS**

U.S. Department of Energy
Room 1E-245
1000 Independence Avenue, Southwest
Washington, D.C.

Friday, December 19, 2008
9:00 a.m.

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P R O C E E D I N G S

9:00 a.m.

Welcome

Linda Graves

MS. GRAVES: Good morning. It's my pleasure to welcome you to this public meeting on test procedures for metal halide ballasts. I am Linda Graves. I am the project leader for Lighting Standards at the U.S. Department of Energy. I am here with representatives of our lighting teams from Pacific Northwest National Laboratory and the Lighting Research Center.

I'm going to turn the meeting over to Doug Brookman, who is our meeting facilitator, and Doug will keep us on track and ensure that everyone has the opportunity to fully contribute to the meeting. Thank you.

Opening Remarks, Introductions, and Agenda Review

Doug Brookman

MR. BROOKMAN: Thank you. Good morning, everybody. I'm going to do a quick agenda review, and we're going to do introductions as well. In fact, let's start with introductions. Let's do that. Please go around the room. If you'd say your name and organizational affiliation.

1 MR. MYER: Michael Myer, Pacific Northwest
2 National Laboratory.

3 MR. FERNSTROM: Gary Fernstrom representing
4 the Pacific Gas and Electric Company.

5 MR. LINGARD: Robert Lingard, Pacific
6 Northwest National Laboratory.

7 MS. PLACET: Marilyn Placet, Pacific
8 Northwest National Laboratory.

9 MR. HANSEN: Dain Hansen, the National
10 Electrical Manufacturers Association.

11 MR. COOK: Keith Cook, Philips Lighting and
12 NEMA.

13 MR. O'ROURKE: Conan O'Rourke, Lighting
14 Research Center.

15 MS. GRAVES: Linda Graves.

16 MR. BROOKMAN: And we're missing a person or
17 two, but they'll be joining us shortly. I'm going to
18 do a very brief agenda review and then we're going to
19 launch into it here.

20 Following this agenda review, there's an
21 opportunity for each of you to make a brief opening
22 statement summarizing your issues and concerns for
23 today's meeting. Immediately following that we're
24 going to turn to presentation followed by discussion on
25 the statute and the context. And following that, the

1 proposed ballast efficiency test method.

2 We'll take a break mid morning, around about
3 11 o'clock or so, and then following the mid-morning
4 break we'll have a presentation followed by discussion
5 on proposed standby and off mode test method. And
6 immediately following that we'll have conclusions and
7 closing remarks and another opportunity for any of you
8 that wish to make concluding remarks to do so.

9 So that's the plan for today. We plan to
10 adjourn around about noon or 12:30 today. We'll see
11 how that goes.

12 That's the agenda for today's meeting.
13 Questions or comments here at the outset?
14 Particularly, is there anything else that any of you
15 think you want to raise that wouldn't be covered in
16 this agenda as written?

17 (No response.)

18 Stakeholder Opening Statements

19 MR. BROOKMAN: Okay. So then, now is an
20 opportunity for any of you to make brief opening
21 remarks, summary statements about issues that you would
22 like to raise, or issues of concern.

23 Keith Cook: I think we'll get into them, so
24 I'm --

25 MR. BROOKMAN: Okay. Not at this point.

1 Okay. Gary, anything from you? No? Okay.

2 So then, let's proceed with the presentation
3 part. All of you have received this packet, and this
4 will describe -- will be the basis for the
5 presentation.

6 I'd ask for your consideration as we're going
7 along today. There aren't so many of us, so it won't
8 be too complicated. Please speak one at a time.
9 Please say your name for the record. If you could turn
10 your cell phones on "silent" and limit the sidebar
11 conversations. I'm going to ask you to please be as
12 concise as possible. I'll be queuing people to speak
13 as best I can, also wanting to encourage follow-on
14 comments.

15 So then, are you ready to go? Or do you want
16 to do the next segment?

17 Statute and Context

18 Linda Graves

19 (PowerPoint presentation)

20 MS. GRAVES: So the purpose of today's public
21 meeting is to review the statute and the DOE actions
22 for metal halide ballasts. This will include a test
23 procedure which is based on ANSI Standard C82.6-2005,
24 and we are including within the scope of this
25 rulemaking consideration about the standby and off

1 mode.

2 So we will present our proposed test
3 procedure and the reporting requirements. We are here
4 to clarify any questions you might have about the
5 proposal, and we seek your comment on the test
6 procedure. And at the end we'll discuss the next steps
7 for this rulemaking.

8 Presentation by Michael Myer

9 (PowerPoint presentation)

10 MR. MYER: From time to time during the
11 presentation you will see a slide that looks like this,
12 which is where it's titled "Issues for Comment."
13 You'll see a box that will say "Issue Box" and it will
14 have a number related to it in the NOPR. This is a
15 specific item where DOE welcomes comments about data,
16 information, or other concerns.

17 MR. BROOKMAN: Michael, introduce yourself.

18 MR. MYER: Thank you, Doug. Michael Myer.

19 MR. BROOKMAN: Thank you.

20 MR. MYER: So, moving forward with the agenda
21 for the presentation, we will first discuss the statute
22 and context, then move on to the proposed ballast
23 efficiency test method, standby and off mode test
24 method, reporting requirements, and finally a closing.

25 This is just a general overview of the

1 statute and context. Section 324(c) of the Energy
2 Independence and Security Act, which will from this
3 point on be referred to as EISA, 2007, amended EPCA to
4 require DOE to establish procedures for metal halide
5 lamp ballasts. So this is the background on that.

6 The EISA prescribed certain ballast
7 efficiencies for different types of ballasts, from an
8 inclusive wattage range of 150 watts to 500 watts. The
9 range of efficiencies is listed in this table by
10 ballast type and wattage range, where applicable. This
11 is just a general review of what EISA requires for the
12 test -- what the results for the test procedure will
13 reflect.

14 MR. BROOKMAN: Keith.

15 MR. COOK: You wanted questions as we go or
16 hold them until the end?

17 MR. BROOKMAN: Let's do it that way.

18 MR. COOK: One question I've got is, right
19 now C82.6 is being revised by ANSI. Has DOE or PNNL
20 considered actually participating in those meetings?
21 They've done that before in some of the solid-state
22 lighting standards.

23 MR. BROOKMAN: Keith, can you say where they
24 are in that review?

25 MR. COOK: They expect to actually have them

1 completed by the middle of this year. They expect to
2 have everything finished by mid 2009.

3 MR. BROOKMAN: Okay.

4 MR. MYER: Were you looking for a response?

5 MR. BROOKMAN: If you please.

6 MR. MYER: I was actually slightly aware that
7 they were revising that. I believe at first that the
8 test procedures -- C82.6-2005 is defined by EISA, so
9 we're still bound by what the EISA requires. So while
10 it is -- I appreciate that you informed us that they're
11 working on it and I might participate, but at this
12 point we're required to just follow what EISA states.

13 MR. COOK: Okay.

14 MR. BROOKMAN: DOE would be welcome to
15 participate?

16 MR. COOK: Absolutely.

17 MR. MYER: Okay. Thank you.

18 Proposed Ballast Efficiency Test Method: Test Setup and
19 Conditions, Test Measurement, and Ballast Efficiency
20 Calculation

21 Michael Myer

22 (PowerPoint presentation)

23 MR. MYER: Following along on the ballast
24 efficiency, certain lamp fixtures are exempted from the
25 efficiency standards. So you'll see that these

1 exempted fixtures include fixtures with a regulated
2 ballast or a fixture that uses an electronic ballast
3 that operates at greater than 480 volts or a very
4 specific fixture that's rated only for 150-watt lamps,
5 is wet location-rated, and has a very specific ballast
6 that is rated to operate at an ambient air temperature
7 above 50 degrees centigrade.

8 So, moving forward to the metal halide lamp
9 test procedure schedule, on December 5th, two weeks
10 ago, the test procedure NOPR was issued. We are now in
11 the public meeting and will soon start the 75-day
12 comment period, with a target publication of the metal
13 halide test procedure final rule June 30th of 2009.

14 Moving forward to the proposed ballast
15 efficiency test method, test setup and conditions, lamp
16 orientation. DOE proposes lamp orientation for testing
17 as specified in Section 4.3 of ANSI Standard C82.6-
18 2005. This essentially requires a vertical, base-up
19 orientation. This is the most stable. It gives the
20 most repeatable and accurate results when doing that.
21 And DOE is proposing a vertical, base-up orientation.

22 Continuing on, this is our first request for
23 comment. This is Item 4 in the NOPR. The Department
24 invites comment on the appropriateness of the lamp
25 orientation requirements as specified in Section 4.3 of

1 ANSI Standard C82.6-2005 that require vertical, base-
2 up, unless the manufacturer specifies another
3 orientation for the ballast and associated lamp
4 combination.

5 We're also seeking comment on whether a
6 preferred lamp orientation approach exists within the
7 industry for lamp ballast testing.

8 MR. BROOKMAN: So it's also helpful for the
9 Department if you can respond in the affirmative.

10 MR. COOK: We have no comment on this. We
11 agree with it.

12 MR. BROOKMAN: Okay.

13 MR. MYER: Okay.

14 MR. BROOKMAN: Thanks, Keith.

15 MR. MYER: Thank you.

16 MR. BROOKMAN: Yes, Gary. Please.

17 MR. FERNSTROM: I guess I have a comment and
18 a question for industry. In our efforts in California
19 to advocate for improved efficiency for horizontal-
20 burned lamps we've heard from industry that that's a
21 significantly different product and needs to be treated
22 in different ways because of the burning position. Yet
23 here I'm seeing that the horizontal-burned products
24 would be used in conjunction with ballasts except in
25 the vertical position? Or am I misunderstanding that?

1 MR. BROOKMAN: Keith.

2 MR. COOK: The purpose is to end up with a
3 standard for testing ballasts, not lamps. And so the
4 result, we just want to make sure we have a uniform way
5 of setting the test up. But lamp orientation is not
6 the key, it's the ballast.

7 MR. FERNSTROM: I understand. Thank you very
8 much.

9 MR. BROOKMAN: Thank you. That's helpful.
10 Okay.

11 MR. MYER: Continuing on to power supply,
12 ambient test temperatures, and instrumentation for the
13 test procedure, DOE proposes power supply
14 characteristics as specified in Section 4.1 of ANSI
15 Standard C82.6-2005. We've outlined in greater detail
16 what Section 4.1 requires: three percent of
17 fundamental voltage and frequency components, limits on
18 the impedance power, and recommendations on power
19 supply devices.

20 MR. BROOKMAN: Keith.

21 MR. COOK: Yeah. One comment we have on that
22 is, you do specify an impedance to the power source to
23 be no more than three percent. We do feel that is too
24 high, but we will come back with written comments.

25 MR. MYER: Thank you.

1 MR. O'ROURKE: This is Conan from the
2 Lighting Research Center. This is the ANSI standard.

3 MR. COOK: It is being revised. That is one
4 that they're already working on.

5 MR. BROOKMAN: Okay.

6 MR. MYER: And when you say too high at three
7 percent, you expect it to be a revised lower number?

8 MR. COOK: Correct.

9 MR. MYER: Okay. Thank you.

10 MR. BROOKMAN: Gary.

11 MR. FERNSTROM: The reality being that the
12 source that drives these ballasts is typically of lower
13 impedance in the field; is that correct?

14 MR. COOK: Uh-huh.

15 MR. FERNSTROM: Thanks.

16 MR. MYER: Okay. Continuing on, ambient test
17 temperature. DOE proposes ambient test temperature as
18 specified in Section 4.2 of ANSI Standard C82.6-2005.
19 This just requires a maintained temperature of 25 plus
20 or minus 5 degrees centigrade to reduce any potential
21 variances. Also, DOE proposes a draft-free
22 environment.

23 MR. BROOKMAN: Keith.

24 MR. COOK: Basically, we agree with the
25 temperatures, but we need definition on what is meant

1 by "draft-free."

2 MR. BROOKMAN: Can you elaborate a little
3 more on that?

4 MR. MYER: I can elaborate. We'll come up --
5 in the revised and final NOPR we'll come up with some
6 technical definition for "draft-free." Standing air.
7 I mean, you don't -- it's --

8 MR. COOK: You have to be careful with that.
9 You do actually want some movement of air. Otherwise
10 you end up with stratification of the air in the test
11 setup. And so -- but you want to minimize the amount
12 of air flow. That's the reason it gets very difficult
13 on how to define that.

14 MR. MYER: Would you do it a cubic-foot-per-
15 minute or some type of HVAC typical definition?

16 MR. COOK: Yeah.

17 MR. BROOKMAN: Is there a typical
18 configuration for this kind of testing?

19 MR. COOK: ANSI is working on that, also,
20 right now.

21 MR. BROOKMAN: Oh, they are. So there's no
22 kind of a standard box for this or anything? No?
23 Okay.

24 MR. O'ROURKE: This is Conan from the
25 Lighting Research Center. Unfortunately, those air

1 flows are so low, most equipment that's available today
2 doesn't measure it easily. It used to be a tissue
3 test.

4 MR. COOK: Exactly.

5 (Laughter.)

6 MR. MYER: You hang a tissue and if it moves,
7 you've met your --

8 MR. COOK: Too much air flow.

9 MR. BROOKMAN: So, Michael, you think it's
10 going to be fairly easy for you to do some more
11 complete, as you say, technical definition?

12 MR. MYER: I don't know if it would be fairly
13 easy, but we will try to come up with --

14 (Laughter.)

15 MR. MYER: I would enjoy writing a
16 specification about tissue tests.

17 (Laughter.)

18 MR. MYER: I can only imagine what the
19 diameter and the dimensions of said tissue would be and
20 how much movement qualifies.

21 MR. COOK: The accepted language.

22 MR. MYER: Exactly.

23 (Laughter.)

24 MR. MYER: But yes, I think we will come up
25 with a better definition. It is a little ambiguous of

1 what "draft-free" is.

2 MR. BROOKMAN: Anything else you want to say
3 about this, Keith?

4 MR. COOK: No.

5 MR. BROOKMAN: Okay. Gary, please.

6 MR. FERNSTROM: Or more significantly, what
7 type of tissue.

8 (Laughter.)

9 MR. BROOKMAN: Double-ply or single-ply?

10 MS. PLACET: We cannot name a brand.

11 (Laughter.)

12 MR. MYER: Thank you for the levity. Moving
13 forward.

14 And this actually brings us to a request for
15 comment. Item 1, the Department invites comment and
16 data on the applicability of the proposed ambient test
17 temperature requirements based on Section 4.2 in ANSI
18 Standard C82.6-2005. In particular, DOE is interested
19 in comment on whether a different set of ambient test
20 temperature -- test conditions might be more
21 appropriate for the metal halide ballast testing.

22 MR. BROOKMAN: Gary, no?

23 MR. FERNSTROM: No.

24 MR. BROOKMAN: Keith, you already said that
25 this is okay.

1 MR. COOK: Uh-huh.

2 MR. BROOKMAN: Yeah. Okay.

3 MR. MYER: Great. Continuing on into
4 instrumentation, DOE proposes using the instrumentation
5 prescribed in Sections 4.5.1 and 4.5.3 of ANSI Standard
6 C82.6-2005. This slide just outlines what the digital
7 requirements are for digital instrumentation so that it
8 has a resolution of three and one-half digits and a
9 minimum accuracy of 0.5 percent of the reading of the
10 RMS capability.

11 And then the next slide follows along on the
12 requirements, only this time it's on the analog
13 instrumentation. Analog ammeters and voltmeters: 0.5
14 percent up to 800 hertz. Analog wattmeters, 0.75
15 percent up to 1,000 hertz. For ballasts with power
16 factors of 50 to 100 percent and plus or minus 0.5
17 percent up to 125 hertz for ballasts with power factors
18 zero to 20 percent.

19 DOE proposes to require all analog wattmeters
20 used on ballasts with power factors less than 50
21 percent to have the same accuracy as those for ballasts
22 with power factors less than 20 percent. For example,
23 0.5 percent for ballasts up to 125 hertz. There is
24 just a disconnect in the ANSI standard of the power
25 factors between 20 and 50 percent.

1 Moving on for a request for comment, the
2 Department invites comment and data on the
3 applicability of the proposed instrumentation
4 requirements for supplies, wattmeters, voltmeters, and
5 ammeters required for testing based on the requirements
6 in Section 4.0 of ANSI Standard C82.6-2005.

7 DOE especially invites comment on the issue
8 of the applicability of the proposed measurement
9 accuracy of plus or minus 0.5 percent up to 125 hertz
10 for ballasts with power factors between 20 and 50
11 percent because ANSI Standard C82.6-2005 does not
12 provide an accuracy value for the proposed
13 instrumentation for these power factors.

14 MR. BROOKMAN: I have to say, I seldom wanted
15 to have a degree in electrical engineering.

16 (Laughter.)

17 MR. BROOKMAN: However. Keith, can you
18 comment on this for us?

19 MR. COOK: No, not at this time. I'm trying
20 to find the comments, in fact.

21 MR. BROOKMAN: Okay. If you'd like then, we
22 can either double back to this or you can just submit
23 them in your written comments. Is this within the
24 reasonable range, do you think, or has the Department
25 got to reconsider what they're talking about here?

1 MR. COOK: Well, there are some comments --
2 I'm trying to find them right now -- having to do with
3 the analog versus the digital type wattmeters and the
4 applicability to some of that stuff. So we'll include
5 that in our written comments.

6 MR. BROOKMAN: Okay.

7 MR. MYER: Do you know if the ANSI revision
8 is going to address the difference in the power
9 factors?

10 MR. COOK: Yeah, it is.

11 MR. MYER: Okay. Thank you.

12 Continuing on, continuing with the test
13 procedure, DOE proposes that only one analog instrument
14 may be connected to the test circuit at one time to
15 reduce impedance effects on the testing. DOE believes
16 that these instrument requirements set forth in ANSI
17 would facilitate repeatable and consistent testing
18 measurement.

19 Another request for comment, Item 3, the
20 Department invites comment on the applicability of the
21 proposed test circuit connection requirements based on
22 Sections 4.5 and 6.10 of ANSI Standard C82.6-2005.

23 MR. BROOKMAN: Gary.

24 MR. FERNSTROM: My observation is that these
25 days it's much more likely we're going to find digital

1 instruments being used. It would be hard to find an
2 old analog instrument of relatively low impedance with
3 that kind of accuracy. However, this is all an ANSI
4 test standard, and we're fine with it however you write
5 it.

6 MR. BROOKMAN: Okay.

7 MR. MYER: Continuing?

8 MR. BROOKMAN: Michael, you're being very
9 efficient and clipping right along. I want to make
10 sure we provide an opportunity if Keith, if you want to
11 --

12 MR. COOK: No, I'm fine right now.

13 MR. BROOKMAN: Okay, okay. Thank you.

14 MR. MYER: Finally, on to lamp stabilization.

15 DOE proposes the process for lamp stabilization that
16 would follow Section 4.4 of ANSI Standard C82.6-2005.
17 There are three sections in 4.4, and the next three
18 slides will outline the actual requirements for them.

19 Section 4.4.1 just requires that the lamp be
20 seasoned or burned in, essentially operated, for a
21 minimum of 100 hours prior to the use with a ballast
22 test.

23 Section 4.4.2 is the basic stabilization
24 method. This just requires the lamps operated at plus
25 or minus 3 percent of the rated wattage and, again,

1 this ambient temperature of 25 degrees plus or minus
2 five. Lamp burning could be anywhere from 30 minutes
3 to six hours before the lamp is finally stabilized. A
4 standby ballast is recommended. And then once the lamp
5 has been transferred to the ballast test circuit,
6 restabilization time is important. So you should take
7 the measurement within five minutes after
8 restabilization.

9 Okay. Continuing, and Section 4.4.3, the
10 alternative stabilization method in ANSI Standard
11 C82.6, recognizes that some low-frequency ballasts that
12 transfer from the reference ballast to the test ballast
13 is undefined. So the following method should be used
14 to ensure reproducible results. Lamp characteristics
15 should be determined with a reference ballast. The
16 same lamp will be driven by the ballast under test for
17 15 minutes, and the electrical measurement should be
18 taken within two minutes after the 15-minute
19 stabilization period.

20 MR. BROOKMAN: This is all a part of the ANSI
21 test procedures, so it should be relatively
22 uncontroversial.

23 MR. COOK: Yeah. We just want to make sure
24 that it does remain consistent with the ANSI standard.
25 Any changes would have significant effect on outcomes

1 in comparison to historical values.

2 MR. BROOKMAN: Right. Okay. Thank you,
3 Keith. Thank you.

4 MR. MYER: The Department invites comment and
5 data on the applicability of the proposed lamp
6 seasoning and system stabilization requirements that
7 follow the ANSI Standard C82.6-2005 requirement for a
8 100-hour seasoning period and the stabilization method
9 in either 4.4.2 or 4.4.3 of ANSI Standard C82.6-2005,
10 with additional methods from ANSI Standard C78.389-
11 2004.

12 DOE is particularly interested in whether a
13 preferred lamp seasoning or lamp stabilization approach
14 exists within the industry.

15 MR. BROOKMAN: Keith.

16 MR. COOK: Typically, we go with the first
17 one, not the alternative.

18 MR. BROOKMAN: The lamp seasoning?

19 MR. MYER: No, the lamp seasoning standard,
20 but the basic is what you're saying, correct?

21 MR. COOK: Right.

22 MR. MYER: 4.4.2.

23 MR. COOK: Either way is acceptable. We
24 don't have a problem with the current approach.

25 MR. BROOKMAN: Okay.

1 MR. MYER: Thank you.

2 MR. BROOKMAN: Thank you.

3 MR. MYER: Finally, on to test measurement
4 and calculations for ballast efficiency. EISA defines
5 ballast efficiency. DOE proposes that ballast
6 efficiency be calculated as the measured output power
7 to the lamp divided by the measured input power to the
8 ballast, or P-out over P-in. The test measurement for
9 metal halide ballasts would require that ballast
10 operating tests be conducted according to the same
11 requirements as set forth in Section 6.10, Ballast
12 Power Loss, of ANSI Standard C82.6-2005.

13 Okay. Continuing on, another request for
14 comment, Item 6. The Department invites comment and
15 data on the applicability of the proposed measurement
16 of ballast power losses in accordance with Section 6.10
17 of ANSI Standard C82.6-2005, which requires the use of
18 a true RMS wattmeter with basic accuracy of 0.5
19 percent. DOE is particularly interested in whether a
20 preferred ballast power loss measurement approach
21 exists within the industry for metal halide lamps.

22 MR. COOK: We really don't have any comment
23 on that one.

24 MR. BROOKMAN: Okay.

25 MR. COOK: We'll have to dig into that one

1 and include it in the written comments.

2 MR. BROOKMAN: Okay. Thank you, Keith.

3 MR. MYER: Thank you.

4 MR. BROOKMAN: Any other comments on this
5 subject?

6 (No response.)

7 MR. MYER: Okay. That brings us to the
8 standby and off mode test method. Per the agenda,
9 though, Doug, technically we have a break in here.

10 MR. BROOKMAN: I don't think we're ready for
11 a break yet.

12 (Laughter.)

13 MR. MYER: Just keeping with the agenda.

14 MR. BROOKMAN: Thank you. I appreciate that.

15 MR. MYER: I appreciate your guidance on
16 that.

17 (Laughter.)

18 MR. MYER: You all seem rested, so we'll
19 continue moving forward.

20 Proposed Standby and Off Mode Test Method

21 Michael Myer

22 (PowerPoint presentation)

23 MR. MYER: This is the overview on standby
24 and off mode. EPCA in relevant part directs DOE to
25 establish test procedures to include standby mode,

1 taking into consideration the most current versions of
2 Standards 62301 and 62087 of the International
3 Electrotechnical Commission. 62087 doesn't apply to
4 lighting equipment, so 62301 would be the appropriate
5 IEC portion, and DOE developed a proposed rule
6 consistent with procedures outlined in 62301 and
7 referenced language from ANSI Standard C82.6-2005.

8 EPCA defines three types of modes covering
9 the various operating conditions: active mode, standby
10 mode, and off mode.

11 EPCA defines active mode as the condition in
12 which an energy-using product is connected to a main
13 power source, has been activated, and provides one or
14 more main functions. Basically, if the lamp is
15 operating, the ballast is in active mode.

16 Gary?

17 MR. FERNSTROM: So, in the context of this, a
18 main function is considered powering the lamp and
19 providing light; is that correct?

20 MR. MYER: My interpretation of "main
21 function" is its intended use, so yes. Operating the
22 lamp -- if it had a clock or some other function, I
23 believe that's considered a secondary function.
24 Actually, the standby definition includes some wording
25 about that.

1 MR. FERNSTROM: Okay. So modes of operation
2 where power may be being demanded yet the lamp is not
3 powered would not be considered active.

4 The reason I'm asking these questions is
5 because this terminology is pretty complicated and
6 confusing, and I'd just like to try and be really clear
7 about it.

8 MR. BROOKMAN: Right.

9 MR. FERNSTROM: It's not just these products
10 but across the whole range of products where we have
11 active, standby, off, and so on modes.

12 MR. COOK: The active mode I'm not as worried
13 about as when we get into the standby mode. That's the
14 one that we've got a lot of concern with.

15 MR. MYER: Okay.

16 MR. COOK: So I'll let you go on and then
17 I'll address my question.

18 MR. MYER: I just want to clarify, actually.
19 So, to reclarify your question so I understand it,
20 you're saying if the lamp is not operating but the
21 ballast is drawing power your interpretation is that is
22 not active mode, correct?

23 MR. FERNSTROM: That's my question. That's
24 not my interpretation.

25 MR. BROOKMAN: Do you have an interpretation?

1 MR. FERNSTROM: It says one or more main
2 functions. So I just want to be clear that the main
3 function is powering the lamp and there isn't any
4 active mode state that could exist where the lamp is
5 not being powered.

6 MR. BROOKMAN: Keith, go ahead.

7 MR. COOK: This gets very difficult. The
8 reason is, we do produce ballasts today that actually
9 have two lamps attached. And what happens is you have
10 the main metal halide lamp and, if for some reason you
11 have a power outage, then you have a quartz lamp
12 secondary that automatically will come on for
13 emergencies so people can still see to get around in
14 these buildings until the metal halide restrikes.

15 Well, depending upon how you read this
16 definition, it says that it's not in active mode now
17 because you're not driving metal halide lamp any
18 longer. But hold it, I'm providing a safety function
19 here that needs to still be comprehended in these rules
20 and definitions. This is one we've got to work on, I
21 think.

22 MR. BROOKMAN: So, do you -- does that
23 influence the active mode definition or does it
24 influence the others, or all?

25 MR. COOK: Both active and standby, I think.

1 We have to sort these kind of situations out, I think.

2 MR. BROOKMAN: I see. Can you provide more
3 details now or do you need to do that in your written
4 remarks?

5 MR. COOK: We'll do it in written remarks
6 because they're working on that one. That's a tough
7 one.

8 MR. BROOKMAN: ANSI is working on that, huh?

9 MR. COOK: That one they were not looking at,
10 in all honesty.

11 MR. BROOKMAN: Oh, okay. So that is NEMA is
12 working on it?

13 MR. COOK: Yeah. We'll have to include this
14 in our written comments.

15 MR. MYER: Would a ballast that's being
16 advertised with a quartz backup, would that main
17 function -- could a main function also be the quartz
18 backup because it's being differentiated from a
19 standard ballast that only -- I'm just asking for more
20 NEMA's thought on that.

21 MR. COOK: Could be, could be.

22 MR. MYER: Okay.

23 MR. COOK: That might be an easy way to
24 define it.

25 MR. BROOKMAN: Conan.

1 MR. O'ROURKE: Yeah. I just want to follow
2 up on that. But with whatever part functions you have,
3 there will be efficiencies associated with them. So
4 that will be a hard part.

5 MR. BROOKMAN: Conan, speak into the mic.

6 MR. O'ROURKE: Sorry. There will be
7 efficiencies associated with those primary functions.
8 So if it is on a quartz, what will that efficiency be
9 and will it meet the requirement. Those will be some
10 of the challenges.

11 MR. COOK: Well, the question is, is that
12 really critical. I mean, how often do they actually
13 operate in that mode? It's such a minute period of
14 time typically for most applications, you'll never see
15 it.

16 MR. BROOKMAN: Michael, you said intended use
17 is the -- what causes it in your mind to be defined as
18 a main function. So, going back to Gary's question,
19 you referenced a clock or some ancillary function that
20 would not be included in active?

21 MR. MYER: Actually, I used the clock analogy
22 because it's actually in the standby definition. It
23 says if -- well, we're talking about standby. Let's
24 move into standby.

25 EPCA defines standby as the condition in

1 which an energy-using product is 1) connected to the
2 main power source, and 2) offers one or more of the
3 following user-oriented or protective functions. aa)
4 is to facilitate the activation or deactivation of
5 other functions by remote switch, internal sensor, or
6 timer, and bb) is continuous functions, including
7 information or status displays, including clocks or
8 sensor-based functions.

9 Keith.

10 MR. COOK: The question is, what if you've
11 got a ballast on controls that -- like a DALI-type
12 control that has to be in a standby mode in order to
13 read any incoming signals. How do you pick up those
14 signals and how do you account for that in the standby
15 mode?

16 MR. MYER: That brings me to my next slide,
17 standby mode. The definition requires a ballast be
18 connected to the power circuits. And so that first
19 part of the definition, the standby wouldn't apply
20 because almost all ballasts are connected to a primary.

21 But if you read the bottom line, DOE interprets this
22 condition as applying to ballasts that are designed to
23 operate in and/or function as a lighting control system
24 where auxiliary control devices send signals.

25 So that would be DALI or -- at this time the

1 Department -- we weren't aware of any DALI ballasts,
2 though we do anticipate at some point there will
3 probably be something like that or an intelligent -- we
4 use "DALI" as some type of a slang for intelligent
5 lighting. It could be other things that are not DALI
6 protocol.

7 MR. COOK: Philips does have one electronic
8 HID ballast that does provide DALI function.

9 MR. MYER: Okay. Thank you for pointing that
10 out.

11 MR. BROOKMAN: So, Keith, the way this is
12 described here, what's your general assessment?

13 MR. COOK: This needs work.

14 (Laughter.)

15 MR. BROOKMAN: Okay.

16 MR. COOK: It's not going to be easy. This
17 is a very difficult area because there are so many
18 different varieties of ballasts and how they operate in
19 these different modes. We've got to think this one
20 through. This one just needs clarification.

21 MR. BROOKMAN: Okay. Gary, do you have any
22 comments at this point?

23 MR. FERNSTROM: Well, just briefly going back
24 to active mode, we think that active mode means when
25 the ballast is operating one or more metal halide

1 lamps, not a quartz lamp.

2 MR. COOK: Okay. I like that approach.

3 MR. BROOKMAN: That's pretty simple.

4 MR. COOK: Yeah, yeah. I like that.

5 MR. O'ROURKE: This is a comment, too. You
6 could also argue that they could be providing a
7 protective feature, which would meet the standby mode
8 definition, too.

9 MR. COOK: Right.

10 MR. BROOKMAN: That helps clarify it.

11 MR. MYER: I also believe the definition in
12 metal halide lamp ballast defines that it has to
13 operate a lamp operating using metal -- it actually
14 defines metal halide in it. So the quartz operation --
15 actually, that would exclude the definition. It needs
16 work.

17 (Laughter.)

18 MR. BROOKMAN: Okay.

19 MR. COOK: It's not easy.

20 MR. BROOKMAN: Okay, okay.

21 MR. MYER: Finally, EPCA defines off mode.
22 The condition in which an energy-efficient using --
23 sorry. Not energy-efficient. An energy-using product
24 1) is connected to a main power source, and 2) is not
25 providing any standby or active mode.

1 DOE considered this definition in the context
2 of metal halide ballasts and believes that off mode
3 does not apply to any metal halide ballast, dimmable or
4 non-dimmable, because off mode describes a condition
5 that commercially available ballasts do not attain.

6 MR. BROOKMAN: So, comments on this
7 definition.

8 MR. COOK: I agree with that.

9 MR. BROOKMAN: Thank you, Keith. Thank you.
10 Additional comments?

11 (No response.)

12 MR. BROOKMAN: Okay.

13 MR. MYER: Continuing on, request for
14 comment. The Department invites comment on its
15 approach for assessing metal halide ballast operation
16 in active mode, standby mode, and off mode, as those
17 terms are defined in EPCA. In particular, DOE invites
18 comment on its tentative conclusion that off mode does
19 not apply to metal halide lamp ballasts at this time
20 and therefore should not be included as part of the
21 proposed test measure procedure.

22 MR. BROOKMAN: We've been addressing active,
23 standby, and off as we've been going along. Perhaps
24 there are some summary comments or additional comments
25 at this time?

1 MR. COOK: I think we already covered them.

2 MR. BROOKMAN: Covered them. Yes, Gary?

3 Okay.

4 MR. MYER: Thank you. Moving forward, the
5 test method and measurements. It's somewhat
6 straightforward for measuring standby power. A signal
7 is sent to the ballast instructing it to reduce light
8 output to zero percent. The main input power to the
9 ballast is measured and then the control signal path is
10 measured.

11 MR. COOK: We've got a problem there, and
12 that is, in some ballasts the signal is actually done
13 over the main line.

14 MR. MYER: We will actually -- we have a
15 diagram for a power line carrier. Is it not power line
16 carrier?

17 MR. COOK: It is power line carrier.

18 MR. MYER: Okay. Can we --

19 MR. COOK: It won't work, though. That's
20 what our concern is. So, anyway, go on.

21 MR. BROOKMAN: You think the way you've got
22 it diagrammed will meet his concern?

23 MR. MYER: Honestly, I jumped the gun. I was
24 just saying we had something. I don't know what his
25 concerns are at the moment.

1 (Laughter.)

2 MR. BROOKMAN: That's why I asked.

3 MR. MYER: So I apologize for saying we had
4 something.

5 MR. COOK: The problem is being able to
6 separate the power between the two, between the signal
7 and the main.

8 MR. MYER: When we show the signal for power
9 line carrier -- or, the diagram, I would like to
10 greater discuss this.

11 MR. COOK: Yeah.

12 MR. MYER: Thank you. So the test
13 measurement of input power. The measurement of input
14 power to the ballast for the main electricity supply
15 during standby mode is based on the approach in ANSI
16 Standard C82.6-2005, Section 6. This is very similar
17 to what is being used for the ballast efficiency. It's
18 essentially power in. It's the same one. Thus the
19 test measurements of the ballast input power would be
20 required to be conducted in accordance with the
21 appropriate sections of the current industry test
22 method.

23 MR. BROOKMAN: Let's pause for just a moment
24 here. Keith.

25 MR. COOK: I'm rereading the comments again.

1 What happens is, a lot of times the power line control
2 signal is a series of very short bursts, of
3 milliseconds. And for us to be able to measure that is
4 going to be nearly impossible just because of the
5 sensitivity of the equipment involved to do this.

6 MR. O'ROURKE: Just a quick comment.

7 MR. BROOKMAN: Conan.

8 MR. O'ROURKE: Yeah. We will be able to
9 measure it but it's not going to contribute too much
10 power.

11 MR. COOK: No.

12 MR. O'ROURKE: Very little amount of time.

13 MR. COOK: Yeah, milliseconds.

14 MR. O'ROURKE: So it's probably not going to
15 be much of an issue on it actually using much power.

16 MR. MYER: Would it use more than a watt?

17 MR. COOK: No. Oh no. It would be
18 milliwatts.

19 MR. MYER: Okay.

20 MR. FERNSTROM: So it's --

21 MR. BROOKMAN: Gary, thank you.

22 MR. FERNSTROM: It's not the signal that
23 we're so much concerned about measuring, it's the
24 standby power of the equipment designed to receive the
25 signal, that's listening.

1 MR. O'ROURKE: This is Conan again. In
2 response to that, we just wanted to make sure that
3 there wouldn't be an opportunity where a significant
4 amount of power would be supplied by the control signal
5 that wasn't accounted for. That was just mainly what
6 this was an attempt for.

7 MR. BROOKMAN: Okay.

8 MR. MYER: Continuing on, measurement,
9 ballast control signal power. So, as proposed in 10
10 C.F.R. 431.324(c), the proposed test procedure would
11 direct manufacturers to address measurement of the
12 ballast control signal power. As DOE understands it,
13 there are four possible ways to deliver a control
14 signal. One is a dedicated AC control signal wire. A
15 second is a DC control signal wire. The third is the
16 power line carrier control signal wire over the main
17 supply input wires, and the fourth is a wireless
18 control signal.

19 DOE estimates that the power supply to a
20 ballast using wireless signal would be very small, well
21 below one watt, making it hard to measure and unlikely
22 to appreciably impact the ballast power.

23 MR. BROOKMAN: The consumption. Keith.

24 MR. COOK: We agree with that consumption.

25 MR. BROOKMAN: Okay. Gary.

1 MR. FERNSTROM: This is Gary. The point of
2 confusion I have here is whether we're talking about
3 the power contained in the signal or the power
4 contained or utilized by the receiver to hear the
5 signal. I don't think a wireless receiver would
6 necessarily have a power demand well below one watt.

7 MR. COOK: Most of them do anymore. They're
8 very low wattage, very low wattage.

9 MR. O'ROURKE: Just a clarifying comment.

10 MR. BROOKMAN: Conan, yes.

11 MR. O'ROURKE: This is Conan. It would still
12 be drawing power, though. The receiver would be
13 drawing power as part of the input to the ballast. So
14 you would see that power, if it was large, being drawn
15 from the input ballast in the input measurement because
16 it can't get the power wirelessly on the receiver side.
17 It would be powered by something in the ballast. So
18 we would be able to capture that on the input power
19 measurement.

20 MR. BROOKMAN: As defined in this test
21 procedure.

22 MR. O'ROURKE: Correct.

23 MR. COOK: It would still show up in your
24 efficiency calculations.

25 MR. FERNSTROM: Would it show up both in the

1 active and standby mode measurements?

2 MR. COOK: Yes.

3 MR. O'ROURKE: Yes, it would.

4 MR. BROOKMAN: Yes, it would. Okay.

5 MR. FERNSTROM: Thank you very much.

6 MR. BROOKMAN: Okay.

7 MR. MYER: Anyway, we're kind of working our
8 way through this here. Moving on, proposed definitions
9 for control signals. An alternating control signal is
10 supplied to the ballast using additional wiring for the
11 purpose of controlling the ballast and putting the
12 ballast in standby mode.

13 A DC control signal is a direct current
14 signal that is supplied to the ballast using additional
15 wiring for the purpose of controlling the ballast and
16 putting the ballast in standby mode.

17 MR. BROOKMAN: Let's pause here. Keith.

18 MR. COOK: I guess I'm not clear on where
19 power line control comes in, then.

20 MR. MYER: Next slide. Can you come to all
21 my presentations?

22 (Laughter.)

23 MR. MYER: Power line carrier signal is
24 defined as a signal that is supplied to the ballast
25 using the input ballast wiring for the purpose of

1 controlling the ballast and putting the ballast in
2 standby mode.

3 And a wireless control signal is defined as a
4 wireless signal that is radiated to and received by the
5 ballast for the purpose of controlling the ballast and
6 putting the ballast in standby mode.

7 MR. BROOKMAN: So let's pause here and
8 consider all four of these definitions and see if we
9 have comments on those.

10 MR. COOK: It looks reasonable to me. I'd
11 agree with it.

12 MR. BROOKMAN: Okay. Thanks, Keith. And of
13 course, if NEMA or if Philips wants to elaborate in
14 their comments, that would -- the Department would
15 really appreciate that.

16 MR. COOK: Yeah, no problem.

17 MR. BROOKMAN: Okay.

18 MR. MYER: Continuing on with the diagrams,
19 this is the proposed test setup for measuring the
20 standby power of a metal halide ballast with an AC
21 control signal. So you have the ballast in the center
22 here, and on the right you have your lamp. You have
23 your input power diagrammed here on the left and your
24 control signal alternating current on the bottom.

25 And again, remember the steps. The first

1 thing the ballast does is tells the lamp to go to zero
2 percent output. Then the input power is measured, and
3 then the control signal power would be measured.

4 MR. BROOKMAN: Gary.

5 MR. FERNSTROM: I have an artistic comment.

6 (Laughter.)

7 MR. BROOKMAN: I've got marking pens if you
8 want to use the flip chart.

9 MR. FERNSTROM: No, I don't think I want to
10 mark on the screen. The lamp is shown base down.

11 MR. MYER: Thank you for --

12 (Laughter.)

13 MR. MYER: I was trying to come up with some
14 other -- yeah, thank you. I like it. But, yes.

15 MR. BROOKMAN: Thank you very much. Keith.

16 MR. COOK: This chart we did have some
17 problems with. If you're looking at power line
18 control, how that applies to this one and being able to
19 measure the difference between the power line control
20 and your input power.

21 MR. O'ROURKE: This is just the AC one.

22 MR. MYER: There is a power line diagram in a
23 second --

24 MR. COOK: Okay, okay.

25 MR. BROOKMAN: So, Conan, say it into the

1 microphone.

2 MR. O'ROURKE: Sorry. This is just the AC
3 power one. We'll show you the power line carrier one
4 in a couple slides.

5 MR. BROOKMAN: Okay.

6 MR. COOK: Okay.

7 MR. BROOKMAN: So then, that's Slide 44. Are
8 we ready to move to the next one, then?

9 MR. COOK: Still the same problem, though.

10 MR. MYER: Moving on to Slide 45, this is the
11 proposed test setup and measurement for DC control
12 signal. It's very similar. You have your ballast,
13 your lamp, which will be next time shown base up, input
14 power, and your DC signal.

15 MR. BROOKMAN: I don't understand the problem
16 you're referencing, Keith.

17 MR. MYER: It has to do with --

18 MR. COOK: The next one.

19 MR. BROOKMAN: Okay.

20 MR. MYER: Finally, moving on to the diagram
21 for test setup and standby power, you have your ballast
22 and your lamp and your input power, and with power line
23 carrier, the control signal is being sent over the same
24 input wire, though you would actually filter out 60
25 hertz.

1 MR. O'ROURKE: The question -- I'll try and
2 clarify it.

3 MR. BROOKMAN: Conan, say your name.

4 MR. O'ROURKE: Conan. I'll try and clarify
5 it for Keith.

6 MR. BROOKMAN: Thank you.

7 MR. O'ROURKE: You would have to high-pass
8 filter this in order to make the measurement properly.
9 So you could get rid of the 60 hertz power and just
10 measure whatever the high frequency signal is.

11 MR. COOK: Whatever is left.

12 MR. O'ROURKE: Right.

13 MR. COOK: And if you have any distortions,
14 you may end up picking up some of that, too.

15 MR. O'ROURKE: Correct.

16 MR. BROOKMAN: Okay. Thank you, Keith. Any
17 additional thoughts or comments on this diagram, Slide
18 46?

19 MR. MYER: You still expect this to be less
20 than one watt, though. The power line is going to be --

21 MR. COOK: It's extremely small, yeah.

22 MR. MYER: Thank you.

23 Moving forward, request for comment. The
24 Department invites comment on its approach to apply the
25 standby mode provisions of this test procedure to all

1 metal halide lamp ballasts and incorporate some form of
2 electronic circuit that enables the ballast to
3 communicate with and be part of a lighting control
4 system. Although all metal halide ballasts would be
5 subject to the test procedure generally, only these
6 types would be subject to the test procedure standby
7 mode power consumption provisions.

8 MR. BROOKMAN: So, additional comments at
9 this time?

10 (No response.)

11 MR. MYER: Moving forward, Item 10, request
12 for comment. The Department invites comments on its
13 proposed test method and measurements for metal halide
14 ballasts which provide the step-by-step procedure and
15 circuit diagrams necessary for measuring the power in
16 watts consumed by the main power input to the ballast
17 and the control signal wire, if any.

18 MR. COOK: We'll include this in our written
19 comments.

20 MR. BROOKMAN: Okay. Thank you, Keith.

21 MR. MYER: Continuing on, combining
22 measurements and burden. DOE proposes that the test
23 measure would direct manufacturers to take two required
24 measurements, again the main input power and the
25 control signal power, in standby mode.

1 The proposed test measure procedure does not
2 tell manufacturers how to combine these values or to
3 use them in equations pertaining to energy efficiency.

4 DOE intends to study best how to use these
5 measurements of standby mode power consumption in a
6 separate rulemaking to review and possibly amend the
7 energy conservation standards which DOE is required to
8 complete by January 1 of 2012 pursuant to EISA 2007.

9 Okay. Moving forward, DOE notes that the
10 proposed test measure is designed to produce results
11 that measure standby power in an accurate and
12 repeatable manner and should not be unduly burdensome
13 on manufacturers to conduct. DOE believes that these
14 objectives would be met by the proposed test procedure,
15 particularly given that it is based upon IEC Standard
16 62301 and follows testing approaches used in ANSI
17 Standard C82.6-2005.

18 MR. BROOKMAN: Keith.

19 MR. COOK: Keith Cook, Philips. I guess this
20 does raise the question as to, I assume that you're
21 going to be gathering this information up in order to
22 assess it. Have you thought about what your sampling
23 is and which ballasts it's going to apply to and all
24 that kind of stuff?

25 MR. MYER: We'll address samples, actually,

1 shortly, but I believe all ballasts -- I mean, the
2 ballasts were addressed earlier on. It applies to all
3 metal halide ballasts 150 watts to 500 watts,
4 inclusive, except for the one exempted ballast that was
5 mentioned there.

6 MR. COOK: There are just so many variations.
7 That's what I'm just concerned about. Looking at
8 high-volume runners --

9 MR. MYER: I don't believe that EISA requires
10 it. There's nothing, I believe, that is exempted from
11 a volume or the most dominant class. If it's
12 manufactured and meets these parameters, I believe it
13 has to be tested.

14 MR. BROOKMAN: Will you restate that,
15 Michael? EISA requires what?

16 MR. MYER: Again, EISA 2007 requires ballast
17 efficiency standards for 150 watts to 500 watts,
18 inclusive, except for that one that's very specific,
19 150 watts, 480 volts. There is the 480-volts
20 electronic ballast or the 150-watt wet location ballast
21 that is exempted. That was in the earlier slides.

22 MR. BROOKMAN: All others are expected to be
23 covered.

24 MR. MYER: That is my understanding.

25 MR. COOK: I understand, but see, that's

1 where it gets to be burdensome. A lot of times you'll
2 end up producing a ballast where the only thing that's
3 different is a bracket or something like that, and you
4 produce just a few a year or something like that.

5 MR. MYER: The definition of basic model and
6 some of the testing requirements might address some of
7 your concerns.

8 MR. COOK: Okay.

9 MR. BROOKMAN: Okay. So, address that in
10 your comments.

11 MR. COOK: Oh yeah.

12 MR. BROOKMAN: Okay. Additional comments,
13 then, on this slide, combining measurements and burden?

14 (No response.)

15 MR. MYER: Moving on to reporting
16 requirements, DOE considered four factors in developing
17 sample size. Again, this is what DOE considered. The
18 actual sample size will be discussed shortly.

19 So the sample size should provide highly
20 statistical valid probability that a basic model is
21 tested and meets the applicable standards, providing a
22 highly statistically valid probability that a
23 manufacturer preliminarily found to be in noncompliance
24 will actually be in noncompliance, minimizing
25 manufacturers' testing time and costs, assuring

1 compatibility with other sampling plans.

2 MR. BROOKMAN: Gary.

3 MR. FERNSTROM: What is "highly statistically
4 valid"?

5 MR. O'ROURKE: This is Conan. That would be
6 testing everything.

7 (Laughter.)

8 MR. FERNSTROM: But I mean, you could put a
9 quantitative --

10 MR. O'ROURKE: Right. He goes on in a little
11 bit to discuss this further. He was just saying these
12 are the considerations that he started out with.

13 MR. MYER: Thank you.

14 MR. BROOKMAN: Let's then get the rest of the
15 definition, or the rest of the description.

16 MR. MYER: Okay. Moving to basic model, DOE
17 proposes a definition for basic model with respect to
18 metal halide ballasts -- I'm sorry?

19 MR. BROOKMAN: Excuse me. I'm sorry. Now I
20 got confused. I thought you were moving -- is basic
21 model a part of the sample size discussion?

22 MR. MYER: Well, what it needs is that we
23 need to define basic model and then we can discuss the
24 sample size so everyone knows what a basic model is.

25 MR. BROOKMAN: You haven't yet at least

1 defined sample size in any sort of a statistical
2 convention that we'd understand.

3 MR. MYER: That is correct.

4 MR. BROOKMAN: Okay. Keep going.

5 MR. MYER: So, a review of the definition of
6 basic model. DOE proposes a definition for basic
7 model. With respect to metal halide ballasts, all
8 units of a given type of metal halide ballast or class
9 thereof that 1) are rated to operate a given lamp
10 wattage and type, 2) have essentially identical
11 electrical characteristics, and 3) have no differing
12 electrical, physical, or functional characteristics
13 that affect energy consumption.

14 MR. O'ROURKE: This is Conan again. Keith,
15 to your question, if it's a bracket issue it shouldn't
16 change.

17 MR. COOK: Right, right. I agree.

18 MR. BROOKMAN: Thank you. That's helpful.
19 Okay. So then, additional comments on these eight
20 terms that the Department is proposing to add?

21 MR. MYER: Oh, you moved on to --

22 MR. BROOKMAN: Oh, sorry. I moved to the
23 comment.

24 MR. MYER: So that moves us into a request
25 for comment. Item 9, the Department invites comment on

1 its definition for the following eight terms that it is
2 proposing to add to 10 C.F.R. Part 431: AC control
3 signal, active mode, basic model, DC control signal,
4 off mode, power line carrier control signal, standby
5 mode, and wireless control signal.

6 MR. COOK: We'll provide something in written
7 comments on that.

8 MR. BROOKMAN: Thank you, Keith.

9 Okay. Let's proceed.

10 MR. MYER: Moving forward, we're turning to
11 units to be tested and sample size. DOE considered
12 three alternatives for specification of test sample
13 size for metal halide ballast equipment: 1) test
14 every unit to determine with 100 percent certainty that
15 each one complies with the statute; 2) test a
16 predetermined number of units to yield a high level of
17 statistical confidence; and 3) test until a
18 determination can be made that a basic model does or
19 does not comply.

20 And again, we're going to move forward.
21 These are just, again, our approaches.

22 MR. BROOKMAN: And the previous slide, Number
23 52, that talks about factors for developing sample size
24 requirements, and this talks about alternatives for
25 specification.

1 MR. MYER: Yes.

2 MR. BROOKMAN: Okay. The intermediary slides
3 messed me up. Go ahead.

4 MR. MYER: Keith, do you --

5 MR. COOK: Well, I guess I don't see any
6 difference between Numbers 1 and 3.

7 MR. O'ROURKE: Three isn't necessarily 100
8 percent testing. This is Conan again.

9 MR. COOK: Well, it does.

10 MR. O'ROURKE: No, it tests [until you can
11 tell one way or another if it passes] -- say you come
12 up with a number that, say, you test 90 of them, right,
13 and it shows that the confidence is [5 percent]-- is
14 such that you're below the efficacy requirement.

15 MR. COOK: Okay.

16 MR. O'ROURKE: Then you could say at that
17 point I've determined that it does or does not meet the
18 standard. So you wouldn't have to test everything
19 necessarily.

20 MR. COOK: Well, you do until you can prove
21 it fails. It's 100 percent until it fails.

22 MR. O'ROURKE: I guess you would be starting
23 with a number somewhere larger than four and something
24 less than 100.

25 MR. MYER: I guess the way I understand these

1 three are, one is absolute, you're going to test
2 everything; two, we're going to come up with a number
3 that we think is statistic; three is a different
4 approach where we don't know what the number is at the
5 time. But I can understand why you're saying --

6 MR. O'ROURKE: This is Conan again. You have
7 to test enough that you can get your confidence
8 interval down to show that it is above the limit. And
9 you [can stop when the determination is reached] --
10 that isn't testing everything necessarily.

11 MR. COOK: Okay. That's not the way I read
12 it, but okay.

13 MR. BROOKMAN: It's your intention to not
14 force them to test everything.

15 MR. MYER: It's a middle position.

16 MR. BROOKMAN: So then, Keith, if there's a
17 way that you can figure to supply the information --
18 the definition so that you don't have to test
19 everything, the Department --

20 MR. COOK: Right. That would be extremely
21 burdensome.

22 MR. BROOKMAN: Yeah.

23 (Laughter.)

24 MR. BROOKMAN: But there's all this
25 statistical convention kind of stuff, right, with

1 sampling size and confidence levels, right? Isn't
2 there some way you can reference that kind of stuff?

3 MR. COOK: Well, yeah.

4 MR. BROOKMAN: Yeah. Okay. I'm trying to --
5 it's been a long time since I've had those statistics
6 courses, but okay.

7 MR. MYER: This actually moves on to the
8 units to be tested, the actual sampling procedure. So
9 DOE proposes randomly selecting and testing a sample of
10 production, not fewer than four of a representative
11 model. A simple average of values would be calculated
12 and become the mean of the sample.

13 For each representative model, a sample of
14 sufficient size -- again, no less than four -- would be
15 selected at random and tested to ensure that the
16 calculated value of energy efficiency is no less than
17 1) the lower of the mean of the sample, or 2) the lower
18 of 99 percent confidence limit of the mean of the
19 entire population of that basic model divided by a
20 coefficient applicable to the representative value.

21 MR. COOK: I have to think that one through.

22 MR. BROOKMAN: Yeah, let's just pause for a
23 moment there and see if anything comes out now.

24 MR. MYER: The first point is saying you're
25 going to take a sample size and that becomes your mean.

1 I think that's the easy one for everyone to get. It
2 gets a little harder after you move on down to --

3 MR. COOK: Number 2 is the one that's --

4 MR. BROOKMAN: Go ahead, Conan.

5 MR. O'ROURKE: This is Conan. I just want to
6 give some clarification. This language was selected
7 from what's already there for some of the fluorescent
8 ballasts and for the mercury vapor ballasts that were
9 in there. So this isn't something new. It's just
10 trying to adapt to what's already out there for other
11 ballast types and applying it to metal halide.

12 MR. BROOKMAN: Gary.

13 MR. FERNSTROM: So, Conan, I understand what
14 a 99 percent confidence limit is, but what does it mean
15 when you divide it by the coefficient applicable to the
16 representative value?

17 MR. COOK: Yeah.

18 MR. O'ROURKE: I can't comment that I can
19 explain that myself, either. That's a question that
20 we're trying to get an answer to about the second half
21 of that.

22 MR. BROOKMAN: But you say that is from a
23 definition that's in the fluorescent --

24 MR. O'ROURKE: In other ballasts.

25 MR. FERNSTROM: Okay. Well, I'd be delighted

1 to understand what that means because my knowledge
2 doesn't go that far.

3 (Laughter.)

4 MR. BROOKMAN: Okay. So, how does that
5 information get supplied to those that are interested
6 in obtaining it? Linda Graves.

7 MS. GRAVES: Yes. Well, your comments are
8 considered and we will respond to all significant
9 comments in the next iteration of this rulemaking. But
10 we will take it in and respond to it that way.

11 MR. BROOKMAN: Thank you. Okay. So then,
12 additional comments on this slide, Slide 56? And final
13 comment, perhaps, on that slide?

14 (No response.)

15 MR. MYER: Moving forward, request for
16 comment. The Department invites comment and data on
17 the accuracy and applicability of the proposed sampling
18 for metal halide ballasts. The Department seeks
19 comment on whether an alternative sampling method
20 exists that might be more appropriate for metal halide
21 ballasts.

22 MR. COOK: I'm assuming that we'll have
23 access to this presentation, right?

24 MR. BROOKMAN: Right. Yeah.

25 MR. COOK: We'll gladly --

1 MR. BROOKMAN: Linda Graves.

2 MS. GRAVES: Linda Graves, yes. We will post
3 the slides on the webpage after this meeting.

4 MR. BROOKMAN: Thank you. So then, I think
5 we've covered that as best we can at this point.

6 MR. MYER: Continuing on, submission of data.

7 DOE proposes that the manufacturer or other entity
8 conducting tests on behalf of the manufacturer provide
9 a certification report for each basic model that would
10 include the following information: 1) the equipment
11 type, 2) the manufacturer's name, 3) the private
12 labeler's name, if applicable, and 4) the
13 manufacturer's model number. The report would be
14 required to certify that the testing was completed in
15 accordance with the applicable test requirements
16 prescribed in 42 USC 6293(b) of EPCA, as amended.

17 MR. BROOKMAN: Is this any different than
18 what they do now?

19 MR. MYER: I'm sorry. What the manufacturer
20 does now?

21 MR. BROOKMAN: Yes.

22 MR. MYER: Well, at the moment, the
23 manufacturer is not submitting a report. I mean,
24 they're asking for a report, but it's not --

25 MR. BROOKMAN: I was thinking consistent with

1 other ballasts.

2 MR. COOK: The data is consistent.

3 MR. MYER: Yes.

4 MR. BROOKMAN: Okay. That's what I wanted to
5 know. Okay. As a benchmark. So, okay. Additional
6 comments, Keith, on this?

7 MR. COOK: No. This is acceptable to us.

8 MR. BROOKMAN: Okay.

9 MR. MYER: Request for comment. Item 12, the
10 Department invites comment on the potential impact of
11 applying data requirements described in other DOE test
12 procedures for products and equipment subject to energy
13 conservation standards as it applies to metal halide
14 ballasts. DOE seeks comment on whether an alternative
15 set of submission requirements exists that might be
16 more appropriate for metal halide ballasts.

17 MR. BROOKMAN: Okay?

18 MR. COOK: That's fine, yes.

19 MR. BROOKMAN: Okay. Thank you, Keith.

20 MR. MYER: Enforcement provisions. Once a
21 federal energy conservation standard becomes effective
22 for metal halide ballasts, the enforcement of the
23 appropriate application of the testing procedure for
24 this equipment would be subject to enforcement of the
25 efficiency requirements and verification of the

1 documented testing.

2 DOE proposes to apply to metal halide
3 ballasts the same basic requirements for enforcement
4 currently in place for other lighting equipment. DOE
5 will review the testing certification.

6 MR. BROOKMAN: Is the next slide linked?

7 MR. MYER: Yes.

8 MR. BROOKMAN: Why don't you go with that
9 one, then.

10 MR. MYER: Enforcement provisions. If DOE
11 receives written information about the performance of
12 metal halide ballasts indicating that one or more basic
13 models may not be in compliance with energy
14 conservation standards, DOE may conduct independent
15 testing of those basic models. The results of this
16 testing would serve as the basis for any enforcement
17 actions related to the application of these metal
18 halide ballast test procedures.

19 MR. BROOKMAN: So, why don't you read the
20 comment box, then.

21 MR. MYER: Request for comment. Item 13, the
22 Department invites comment on the potential impact of
23 applying the enforcement provisions described in other
24 DOE test procedures for products and equipment subject
25 to energy conservation standards as they apply to metal

1 halide ballasts.

2 MR. BROOKMAN: So let's just pause and give
3 you a chance to reread these slides here. Yes, Keith?

4 MR. COOK: Yeah, it's fine.

5 MR. BROOKMAN: This is essentially the same
6 as for other ballasts.

7 MR. COOK: Yeah, this is what you'd expect.

8 MR. BROOKMAN: Yeah. Okay.

9 MR. COOK: No surprises.

10 MR. BROOKMAN: Okay.

11 MR. MYER: Closing remarks. At this time I'm
12 going to return the presentation to Linda and Doug.

13 Conclusions and Closing Remarks

14 Linda Graves

15 MS. GRAVES: Linda Graves. I guess, lastly,
16 we'd just check with you. Do you have any other
17 statements you would like to make?

18 (No response.)

19 MS. GRAVES: Okay. Then, in that case,
20 really the last thing is that we welcome your comments.

21 The notice that is posted on our webpage has all the
22 details of how to provide comments, but I would just
23 point out that we would like you to be sure and
24 identify the topic and either include the docket number
25 or the regulatory identification number. We have a lot

1 of different lighting rulemakings in progress. It
2 makes it easier for the people who manage our docket to
3 keep that clear.

4 And you know that you can submit your
5 comments electronically or by mail or by courier.

6 MR. COOK: Excuse me, Linda. To make things
7 a little easier, do you know exactly what the webpage
8 is that this will be posted in?

9 MR. O'ROURKE: Michael, can you go to the
10 next slide?

11 MR. MYER: It's on the first --

12 MS. GRAVES: I realize that we forgot to put
13 it on this handout.

14 MR. MYER: It's on the very first slide in
15 very, very light color. At the bottom, under where it
16 says D.C.

17 MR. COOK: Oh, I didn't even realize that was
18 there.

19 MR. MYER: It's one of those PowerPoint
20 things that the link had been selected and so it
21 changed color.

22 MR. COOK: Okay. I see.

23 MR. MYER: And the following -- and the last
24 slide -- but that's where the URL for that is found in
25 this presentation.

1 MS. GRAVES: If you received the original e-
2 mail when I sent out the notification to all the
3 stakeholders in my lighting e-mail list, that was where
4 the link was.

5 MR. COOK: Okay.

6 MS. GRAVES: I will send out another e-mail
7 when the notice is actually published in the Federal
8 Register. There has been a backup in getting notices
9 published at the Federal Register, so DOE has
10 officially issued the notice but the Federal Register
11 publication of the notice is what actually triggers the
12 counting of the 75-day comment period.

13 So when that happens, I will send out an e-
14 mail to everyone letting you know the public comment
15 period has started and the Federal Register will
16 actually specify what the 75-day ending date is. So
17 that will be in the e-mail message, and we will also
18 swap out the actual Federal Register notice onto the
19 webpage.

20 Any other questions?

21 (No response.)

22 MS. GRAVES: In that case, I want to thank
23 you very much for coming. This was extremely useful
24 input to the Department. Clearly, stakeholders are
25 quite knowledgeable on this topic, and I think that's

1 why we had such an expedited meeting. Thank you very
2 much.

3 MR. BROOKMAN: Thank you. We have an
4 evaluation form. If you'd take 30 seconds to fill them
5 out, that would be helpful to the Department.

6 (Whereupon, at 12:30 p.m., the meeting was
7 adjourned.)

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