UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

PUBLIC MEETING ON TEST PROCEDURES FOR PLUMBING PRODUCTS

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Presenters

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Jennifer Williamson

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AGENDA

P R O C E E D I N G S

MR. BROOKMAN: Okay, let's start. Good morning everyone and welcome. This is the U.S. Department of Energy's public meeting on Test Procedures for Plumbing Products.

Today is Tuesday, July 24, 2012 here in the Forrestal Building in Washington, D.C. My name is Doug Brookman from Public Solutions in Baltimore. We're going to start off with welcoming remarks from Lucas Adin.

Welcoming Remarks

MR. ADIN: Can everyone hear me okay? Good morning. I'm Lucas Adin, from the U.S. Department of Energy in the building technologies program, and I manage the plumbing products rulemakings for our office. And I welcome you all here for this meeting. We're glad you're able to attend and participate. We're going to present some information about proposed changes to our test procedures for these products and a few other related items, so it's very useful for us to have a chance to do that and also for us to be able to receive information and comments from all of you. So thank you for coming.

MR. BROOKMAN: Thank you. It's our tradition to start with introductions while you're

working on advancing that. So I'll start over here to my left and please say your name and organizational affiliation. You can get used to pulling the mic close to your face and turning it on and off. The little illuminated green – yes, now it's on. Yes.

Introductions

MS. SALMON: Hi. Stephanie Salmon with the Plumbing Manufacturers International.

MR. BROOKMAN: And we also need to get in the habit of turning them off and we have less feedback that way. Please, if you would.

MS. HEINE: Kristine Heine for Kohler Company.

MR. BROOKMAN: Thank you.

MR. OSANN: Ed Osann with the Natural Resources Defense Council.

MS. HOBBS: Karen Hobbs, Natural Resources Defense Council.

MS. MAUER: Joanna Mauer, Appliance Standards Awareness Project.

MS. TIEDEMAN: Jennifer Tiedeman, DOE, Office of General Council.

MR. BROOKMAN: Thank you. Please. You can just stand.

MS. WILLIAMSON: Jennifer Williamson,

Pacific Northwest National Laboratory.

MS. MCMORDIE: Kate McMordie, Pacific Northwest National Laboratory.

MR. COCCIARDI: Josh Cocciardi, Department of Energy.

MR. BROOKMAN: Thank you. And our web master is sitting over there. Okay.

Agenda Review

MR. BROOKMAN: All of you received a packet of information when you signed in this morning. I'm going to go do a brief agenda review. Immediately following this agenda review, there's an opportunity for anybody that wishes to do so, to make opening remarks, to make brief summary statements about issues that are important to you.

Following that, we will move straight into the presentation material. All of you received a packet of information with these colorful PowerPoint slides that will be the basis for the presentation. Lucas Adin will start off talking about the regulatory history and then the scope. Following that, a rulemaking overview.

We'll take a break mid-morning, round about 10:30 or so, it's not listed on the agenda, but somewhere in there, when we get there, that's when

we'll break. Following that we'll hear from Jennifer Williamson, proposed changes to test procedures, and then directly following that, proposals regarding dual flush toilets, commercial prerinse spray valves, showerhead flow controls. And then proposed changes to product definitions. Following that, proposals regarding basic models and statistical sampling.

Round about noonish, depending on the timing, we'll take a lunch break if that's needed. And then whenever we get there, we'll hear about the NOPR analyses and then finally, at the end of the day, whenever that is, whether that's noon or 1:30 or even later, we'll talk about next steps and there'll be an opportunity for anybody that wants to to make additional remarks, closing remarks, additional issues to be captured for the record.

Any of you who have been here before, some of you have not, what have emerged as matters of courtesy, if you would, please speak one at a time. Please, say your name for the record each time you speak.

If you can keep the focus here. Please turn your cell phones on silent mode. Limit the sidebar conversations. Please be concise and share the air time. I'm going to be cueing individuals as best I

can to speak. I also wish to encourage follow on comments. Sometimes that's useful for the Department as they're reviewing the transcript of this meeting.

There will be a complete transcript of this meeting available on the web. We have several individuals joining us via the web. The Department wishes to encourage web participation. If you are joining us by the web, welcome. I would ask you here at the outset to mute your phones. That will limit the feedback we have here at this meeting room, and if you wish to join the conversation, ask a question or make a comment, please raise your hand in the software and then we will find a place to insert you in the meeting and you will be speaking live to everyone who's in the room here in the Forrestal Building.

Let me see –

MR. OSANN: Doug?

MR. BROOKMAN: Yes, Ed.

MR. OSANN: Is there a list of names of those that are participating by webinar?

MR. BROOKMAN: We – in fact, I was thinking maybe we would ask – can you read the names of the individuals participating, Marcus? We've done that previously. Do you have a microphone over there?

WEBMASTER: On line we have Chris Menduza –

I apologize if I don't pronounce this correctly, Christina Haduc, Daniel Glieberman, Heidi Havenstein, Jeff Baldwin, Larry Himmelbloud, Len Swatkowski, Maryanna Nicole. Maryann Dickenson, Michael Woodford, and Shawn Martin (all spellings phonetical.)

MR. BROOKMAN: Thank you. And thanks, Ed, that's a good catch. We want to have those individuals noted. So I think that is the preliminary stuff that I intended to cover. We're going to go straight now to an opportunity for individuals to make opening remarks, opening statements for the record. And Stephanie, I see you've got notes in front of you.

MS. SALMON: I do and I'm happy to make some opening comments, but I thought it would be more helpful, you know, to hear from DOE first and then I'm happy – we've already submitted our comments for the record on the proposed changes, but it's up to you as moderator here what you feel is best.

MR. BROOKMAN: I note as I'm looking over there that you've got several pages of typed comments.

MS. SALMON: I wasn't going to read them all.

MR. BROOKMAN: Okay.

MS. SALMON: Let me go ahead and just make an ---

MR. BROOKMAN: You can summarize.

MS. SALMON: I can make an opening comment.

MR. BROOKMAN: That would be helpful.

MS. SALMON: I can add on later.

MR. BROOKMAN: Okay.

Opening Remarks

MS. SALMON: Again, this is Stephanie Salmon with the Plumbing Manufacturers International. We have submitted comments for the record in regards to the Notice of Proposed Rulemaking. And overall, PMI supports updating of the referenced American National Standards in the document. However, we also support the elimination of duplicate referencing to the American National Standards in any modification of the language in these standards that will create confusion in the marketplace and unnecessary complexity to the standards that have been drafted, edited, and approved through a national consensus process.

So in our comments, we go through the different sections that you're going to talk about, one through eight, and made references to that, so I would like to hold off until you sort of go through that before, so we're not objecting strongly to anything that was put in here, but there were a few things that we had made suggestions to for changes.

MR. BROOKMAN: Good, that makes sense. Okay. Great. Other comments here at the outset? Kristine? No comment? Ed Osann.

MR. OSANN: Yeah, Ed Osann with NRDC. Simply to say that we welcome the publication of the NOPR and we appreciate that DOE is recognizing its obligations to oversee water use efficiency for plumbing products.

MR. BROOKMAN: Okay. Thank you. Cast my eyes around. No additional comments here at the outset? Okay, then, so then we're going to proceed with the PowerPoint slides as you have them, and Lucas Adin is going to be our first speaker.

Regulatory History

MR. ADIN: So very simply to start, this is just a general overview of the purpose of this meeting. Hopefully it's fairly self-explanatory from the Notice of Proposed Rulemaking itself, but we're essentially here just to give a broad overview of what was proposed, hopefully clear up any details that any of the folks in this audience had questions about, or any other related items, and provide a general forum for discussion about these issues, and provide an opportunity for you to present any related information about them that you feel we may need to know in the

course of making our final decisions about the items that we're proposing in the NOPR.

As we go through the meeting, you're going to see these issue boxes pop up from time to time. These just capture items that we're looking for more information about. I think all the ones that we have in this particular presentation are requests for comment on the NOPR itself, so those are also in the NOPR document. We don't have any additional ones today, but we did put them throughout the presentation just to highlight where we're looking for comment.

So I'll start off with the content of the presentation for today with a brief overview of the regulatory history for these products. The first – well, the beginning of the energy conservation program that DOE administers actually started with the Energy Policy and Conservation Act of 1975. So that essentially formed the legal basis for the program that we have today. The water conservation standards themselves and the test procedures that DOE initially used to enforce them were established through the Energy Policy Act of 1992. And that initially used the two ASME standards that you see up there, the A112.18.1M 1989 version for faucets and showerheads, and the ASME A112.19.6 1990 version for water closets

and urinals.

A few years after those initial regulations took effect, ASME made amendments to those standards, and in keeping with its statutory obligations, DOE conducted a rulemaking to update its regulations accordingly. And in 1998 that final rule was published. It adopted the 1996 version of the A112.18.1M procedure for faucets and showerheads, and the 1995 version of A112.19.6 for water closets and urinals. And as we note there, that rule did not change the relevant water conservation standards. They remain the same as the ones that were put in place in 1992.

For commercial prerinse spray valves, those came into DOE's regulatory sphere as part of the Energy Policy Act of 2005, which established a national water conservation standard for those products and also established the test procedure for those, which was ASTM F2324, and that was put into DOE's regulatory code as part of a 2006 final rule. Since that time, ASTM has reissued that standard without any substantive changes. They basically just reapproved it in 2009.

Since the last rulemakings that DOE conducted in 1998 and 2006, this slide essentially

covers what DOE is doing today through its statutory obligations. Essentially what the statute says in the Energy Policy and Conservation Act –

MR. BROOKMAN: Hey, Lucas.

MR. ADIN: Yes.

MR. BROOKMAN: Put the microphone on your tie and get it six inches from your mouth.

MR. ADIN: Oh, I'm sorry. Are you catching what I'm saying?

MR. BROOKMAN: Yes, it's kind of a – and speak up just a tad.

MR. ADIN: Is that better?

MR. BROOKMAN: Yes, better.

MR. ADIN: Okay. So the statute essentially says that if DOE – excuse me, if ASME revises either of the standards that DOE references for water closets, urinals, showerheads or faucets, which are captured in those two citations you see there, DOE has to accordingly amend its regulations to reference the newly amended ASME standards. Since that time, ASME has adopted amended versions of both of those standards. There was a 2011 version which was just recently adopted for showerheads and faucets, and then a 2008 version of the A112.19.2 procedure for water closets and urinals which – the number did change

because it was a combining of two previous test procedures, the A112.19.6 procedure and A112.19.2 were combined to form the new A112.19.2, so it is the same basic procedure, just updated.

There have been no substantive changes, as I mentioned, for commercial prerinse spray valves, that procedure, so DOE is proposing to retain the existing procedure with no changes, but to reference the reapproved versions, the 2009 version. So that essentially covers the regulatory history.

Scope

I'm going to briefly cover the scope of this rulemaking. Essentially, the purpose of this rulemaking is to review the existing procedures and in accordance with DOE's statutory obligations, to determine if the ASME standards have been amended in a way that is appropriate for DOE to adopt. So in doing that we essentially conducted a comparison of the existing ones that we reference and the newly amended versions to insure that we understand all those differences and we're incorporating something that will accomplish the intent under EPCA for us to use them as official uniform national procedures.

We did review the product definitions for these products to insure that we're providing

necessary clarity in the scope of coverage. A few of the definitions in particular were rather vague and we've received a lot of questions in the past as to how far they go in covering some of these products, and the intent of those amendments is to try and clear up those issues.

There's a design requirement for showerheads involving a flow restrictor. This is actually a part of the original A112.18.1M procedure which has just been passed down through time. It hasn't actually changed, we're just addressing a couple of items there, and incorporating it into the standard in a more specific way.

And then we covered a couple items regarding basic model definitions and it's not mentioned here, but it's a statistical sample for certifying products.

MR. BROOKMAN: I think we're having a – we're getting feedback. For those of you who are joining us via the web, we're getting feedback that Lucas – that his lavaliere mike is fading in and out so we're going to try this podium-based mike to see if that works better, and let's get that fairly close to your face.

MR. ADIN: Okay. That better? Okay. For the folks on the webinar, if there's anything in

particular that you missed that you'd like me to cover again, just let me know, but we're going to go through all these items in more detail throughout the presentation, so hopefully we don't miss anything that you were hoping to hear.

So the last item was just for regulatory review. We have some statutory obligations to insure that our rulemakings meet various statutory requirements, things regarding small businesses and things of that sort. So we did conduct analysis accordingly, and we'll discuss those in more detail. So that's essentially the overview.

Rulemaking Overview

The next item we have is getting into the rulemaking itself. Just very quickly, the process for conducting this rulemaking is actually relatively simple, especially compared to a standards rulemaking that some of you might be familiar with that has many stages, a test procedure rulemaking essentially is just two stages. We do a Notice of Proposed Rulemaking which we published on May 30th. I'm sure everyone in this group has seen it, and so this meeting is essentially just to cover what we put in the NOPR and to receive comments, and written comments as noted here are also welcomed. They must be

submitted to DOE by August 13, 2012. And I also always like to point out that it's actually midnight on August 13th, so you have the full day that day to get them in.

The NOPR itself has more details on how to send them in, but you can send them in via e-mail, or hard copy. Just be aware that if you send them in via hard copy, we won't get them for at least two weeks because they go through the whole mail sanitation process.

MR. BROOKMAN: You're going to be at your desk until midnight.

MR. ADIN: Yeah.

MR. BROOKMAN: Just thought I'd confirm that. Okay. So.

MR. ADIN: So that's the basic overview. Are there any questions at this point? Okay. So we'll proceed from here with the substance of the proposal. Our first presenter on that is Kate McMordie. No, sorry, Jennifer Williamson. I knew I'd get that backwards.

MR. BROOKMAN: Jennifer first. No questions until now? How are we doing with everybody – they're still with us on the web? Yep? Okay. So, get that microphone fairly close to your face. Yeah, let's not

use the Lavaliere because it was fading in and out.

Proposed Changes in Test Procedures

MS. WILLIAMSON: Hi everybody. I'm Jennifer Williamson with Pacific Northwest National Laboratory and I'm just going to go over the changes that we identified between the currently referenced standards and the standards that we're proposing to incorporate by reference.

And we're going to start with faucets in the A112.18.1. There is a typo on this slide on the next, where it says no specification for test pressure tolerance – that should say – oh, we got it changed. So there isn't a typo.

MR. BROOKMAN: You're talking about the first bullet there.

MS. WILLIAMSON: Yeah, in the printed slides, it's different than what we have up here. For faucets there was a tolerance of either plus or minus one psi to the test pressure set up. The test procedure temperatures were modified very slightly – they went from four to 66 degrees C to five to 71 degrees C. And then there's a new requirement in the 2011 version that you have to use a container that's large enough to hold the flow that you're expecting over a one minute interval.

So, showerheads are covered in the same test procedure and there are similar changes. The tolerance is a plus or minus two psi. The temperatures changed fairly significantly on this one, from four to 66 degrees to 32 to 44, most likely because there aren't very many people who are going to be taking showers at –

MR. BROOKMAN: I'm just now getting it, so would you back up one slide? You're comparing and contrasting 1996 to 2011.

MS. WILLIAMSON: Correct.

MR. BROOKMAN: You were moving quickly and I like that, but let's not move too quickly.

MS. WILLIAMSON: Okay. Sorry.

MR. BROOKMAN: So let's back up to the first slide and give everyone a chance to look at the proposed changes. You were doing a good job of explaining.

MS. WILLIAMSON: Okay. Does anyone have any questions on this one? Comments? No? Okay.

So we covered the test pressure and the test procedure temperature. The showerhead has a unique requirement that you're required to maintain the flow for a minimum of one minute, but it also has the requirement to have that container that can hold the

flow for that one minute.

So questions and comments on the showerheads and faucets?

MR. OSANN: This is Ed Osann, NRDC. A couple points regarding the showerhead test procedures. The ASME – the latest ASME A112.18.1 allows for two possible approaches to testing these fittings. I think the same is true for faucets as well, either using a fluid meter or using the timed volume method.

MS. WILLIAMSON: Correct.

MR. OSANN: And you noted some word changes relating to the timed volume test procedure. I'm wondering if DOE has reached any conclusions about the relative efficacy of those two approaches, whether they really are interchangeable, whether the timed volume method may be potentially open to a wider range of error. I make two observations about that. One is that for showerheads that are to be tested at a flowing pressure of 80 psi, which is really at the high end of normal pressure for residential service. Which means that it's coming out pretty hard. And I would say more forceful flow than certainly the average consumer experiences. So the potential is there for splash and the test procedure does not seem

to be explicit, unless I've missed something, about the positioning of the container, about determination that all the flow is being captured, any notation of splash or overage, and it's not hard to imagine that there could be losses associated with that.

The other point is that the specification also – the ASME standard also contains a limitation on leakage from ball joints, and that's in 5.3.5, without any separate test procedure for determining the rate of leakage, or verifying whether leakage is present or not. So presumably that's to be captured in the flow rate test procedure. But it's quite possible, depending on the orientation of the spray head, that leakage from a ball joint would drop vertically while the spray from the showerhead itself may be going in a different direction and the receptacle being positioned to capture the flow, not capturing the leakage.

MR. BROOKMAN: Ed, are you suggesting that the Department should change or expand what they've written here to accommodate that information?

MR. OSANN: I'm suggesting that the Department consider the relative efficacy of the two approaches that are currently – that are authorized in the ASME standard, and consider the possibility of not

carrying the timed volume method into the CFR.

MR. BROOKMAN: Okay. Thank you.

MS. WILLIAMSON: So now we're going to move into the A112.19.6 1995 updated to A112.19.2 2008.

MR. BROOKMAN: Before you move on, Jennifer, Shawn Martin has raised his hand, let's hear from Shawn, presuming it's on this last issue. Yes. Shawn, you're on.

MR. MARTIN: It is indeed.

MR. BROOKMAN: Please speak.

MR. MARTIN: Can you hear me?

MR. BROOKMAN: You're sounding good, keep going.

MR. MARTIN: Okay. Very good. I just wanted to just follow on Ed's comment, which was a good one. The key for the timed volume, by the way, is related to the overall size of the volume that's collected. The more you collect, the more accurate it becomes. That said, Ed alluded to an issue that has existed with this for some time, and that is the pressure. The 80 psi is not reflective of the extremes of the showerhead. I can hear myself there, so I'm trying to speak slowly. At the showerhead, after having gone through the water meter, various lengths of pipe, and the shower valve, it will have

reduced significantly, to the point that it could easily be 30 psi or below. The ASME committee has not made any move to correct this, despite the fact that they know that it's excessively high, because it has been in use for so long. My question or comment would be that the DOE might wish to work with ASME to correct this obviously excessive number.

MR. BROOKMAN: Okay. Thank you. Shawn, are you – could you be more specific? Since you're commenting, what would you suggest the Department do, specifically?

MR. MARTIN: Well, there's an acknowledgement by the ASME committee which I've participated in for some time that the number is too high, and in fact if you look at the test values for shower valves, they've added an intermediate pressure for testing in the latest version of the shower valves specifications for temperature computation. My recommendation would be that the DOE consider working collaboratively with the ASME committee to examine the possibility of revising that 80 psi number to something more reflective of actual usage pressures.

MR. BROOKMAN: And those usage pressures would be what?

MR. MARTIN: Conceivably far less, probably

somewhere in the neighborhood of 30 psi. It can range anywhere from say in the low 20s upward to maybe 40 or 50. It depends on the supply pressure and that varies significantly as you move across the country, and depends significantly on the shower valve and the plumbing system.

MR. BROOKMAN: Okay. Great. Thank you for those detailed commends. Ed Osann.

MR. OSANN: Yeah, this is Ed Osann, just a point in follow up. I just observe that the standard, the statutory standard is expressed as a flow rate at 80 psi and that for showerheads with a fixed orifice restrictor, there will be a relationship between flow rate and psi so that if a lower test pressure were used to validate compliance with the federal standard, there would have to be some adjustment for the fact that this product could flow at a higher flow rate and perhaps a non-compliant flow rate, at a higher pressure than it’s being measured at. It’s the relationship between pressure, particularly flowing pressure, and the flow rate that needs to be attended to.

MR. BROOKMAN: When Shawn was speaking earlier, Shawn I want you to get back on the microphone and say your organizational affiliation so

we know who you're representing. Shawn, can you do that for us?

MR. MARTIN: Of course, my apologies. My name is Shawn Martin and I'm here on behalf of the International Code Council.

MR. BROOKMAN: Okay. Thank you. So far the webinar is working well, that's good news. Now we're going to keep going.

MS. WILLIAMSON: Okay. So urinals and water closets, again, the 1995 is what's currently in the CFR. We're proposing to incorporate by reference A112.19.2 2008, and again these are just the changes from one to the other.

In 1995, there was a note on the setup figure that indicated a filter was optional. That filter is now required.

MR. BROOKMAN: Yes, pardon me. Ed Osann, go ahead.

MR. OSANN: Ed Osann, sorry to interrupt. I actually had another point on showerheads.

MR. BROOKMAN: Yes, please. We want to keep this in sequence. Go ahead.

MR. OSANN: DOE observed in the text of the NOPR that while the ASME standard has long had a – made reference to the force required to remove a

restrictor –

MS. WILLIAMSON: We're going to get to that a little bit later.

MR. OSANN: You're going to deal with that separately?

MS. WILLIAMSON: Yes.

MR. BROOKMAN: Okay, so let's hold on that for the moment. Okay. Okay.

MS. WILLIAMSON: So we've covered the filter. The calibration requirement for the receiving vessel used has changed from point one gallons to point one seven gallons. This was part of the harmonization with the Canadian Standards Association, so that the increments would be in quarter of a liter. And in the new standard, you have to use a timer to verify that the actuator is not held for more than one second and the increments of that timer have to be no more than a tenth of a second.

MR. BROOKMAN: Hold on there. Another person has raised his or her hand – I think it's a he in this case, Shabbir Rawalpindiwala. Sorry if I've butchered that. Shabbir, please speak.

MR. RAWALPINDIWALA: Yes, can you hear me?

MR. BROOKMAN: Yes, you're sounding good.

MR. RAWALPINDIWALA: Okay. I had a comment

regarding the showerhead.

MR. BROOKMAN: Okay. Go ahead.

MR. RAWALPINDIWALA: The 80 psi has been there since when the DOE adopted the original standard, and when you test the flow rate, they are tested at different pressures, up to 80 psi, and after a certain amount they reach a flat curve. As regards to the ball joint, it is really well spelled out how to test them, and I don't know for what reason Ed Osann has problem that it is not adequate. These standards just got revised and published in 2011. Ed and other people had all the liberty to comment if they had any problems and nobody – and I've not seen him comment at all. Thank you.

MR. BROOKMAN: Thank you. We're trying to get to the issues at hand here, and not the persons involved, but maybe there is something additional to be said on this point before we move on. Okay. So we're going to move on. Thank you for your comment.

MS. WILLIAMSON: Is everyone okay with these? So two more changes for urinals and water closets. The first is for assemblies that have a flushometer valve. The test pressures have changed. A 50 and 15 psi are now 35 for a siphonic bowl and 50 and 35 are now 45 for a blowout bowl.

And finally, the rounding of the total flush volume has now been changed to match the vessel calibration. So are there any comments or questions on urinals and water closets?

MR. BROOKMAN: You can see that the Department has included a specific comment box here. DOE requests comment on its proposal to incorporate by reference ASME ANSI standard A112.19.2 2008 for water closets, urinals, specifically the impact of changes outlined.

MR. OSANN: Ed Osann.

MR. BROOKMAN: Yes, Ed Osann.

MR. OSANN: There's data in the literature that indicates that while differences in static pressure may have relatively little effect on the flush volumes of valve type toilets, the differences in flowing pressure can have substantial difference. And I think DOE should take cognizance of that. We'll provide some of that information for the record.

MS. WILLIAMSON: Thank you.

MR. BROOKMAN: Thank you. Okay. It seems as though Shabbir has raised his hand again. Shabbir, please speak and also say your organizational affiliation, Shabbir.

MR. RAWALPINDIWALA: Yes, Shabbir

Rawalpindiwala, Kohler Company.

MR. BROOKMAN: Okay, Kohler, yes.

MR. RAWALPINDIWALA: If you are talking about the measurements of the flush volume whether of the urinal or the water closet, yes, the standard gives the option of measuring it by the bucket and weighing it, but however that is the archaic way of doing it. Most of the laboratories, including ours, and the test laboratories, measure it with the digital flow meter.

MR. BROOKMAN: Okay.

MR. RAWALPINDIWALA: So I just wanted to bring that out.

MR. BROOKMAN: Okay. Other comments in response to item two as listed on the slide before we move on.

MS. WILLIAMSON: I'm going to turn it over to Kate.

Proposals Regarding Dual Flush Toilets, Commercial Prerinse Spray Valves, And Showerhead Flow Controls

MS. MCMORDIE: Can you hear me okay? So I'm Kate McMordie with PNNL as well. And so now we're moving into some more of the details of the NOPR. This slide is presenting information on dual flush toilets. So, dual flush water closets were not around

during the 1995 version of the ASME standard, so DOE's test procedure does not address dual flush toilets. So DOE is proposing to include the requirements for maximum flush mode for dual flush toilets to meet the ASME standard, the 2008 standard. But because there are new metrics that have been formulated around dual flush toilets so that the manufacturers who are producing these products can show that they have reduced volume, DOE is recognizing the need for that. So DOE is proposing the measurement of an average representative water use for dual flush toilets, and that would be to follow a similar metric to what Water Sense has, and that is essentially a weighted average of two reduced flush and one full flush, to show the average representative water use for dual flush toilets.

So DOE specifically – and I'm going to flip back – I can go back to that slide, but I just wanted to mention that item three in the NOPR, the comment is specifically asking for information if this two to one ratio is appropriate, and if it is representative of the average water use for these products. So I'm going to flip back just so you can see the more technical points that are being made in the NOPR. Are there any questions on this?

MR. BROOKMAN: Or comments?
MS. MCMORDIE: Yes, thank you.
MR. BROOKMAN: Joanna Mauer.
MS. MAUER: Joanna Mauer. I guess a question. If DOE adopts this in the test procedure, a representative average use for dual flush water closets, does that mean that, for example, the Water Sense Program would have to use that specific ratio that would be adopted in the DOE test procedure, even if, for example, new data became available that showed that that ratio should be changed?
MS. MCMORDIE: I think I might let Lucas answer that one.
MR. ADIN: This is Lucas Adin. That's something that we might have to look into a little bit more carefully. Water Sense is not covered under the same legal provisions or the Memorandum of Understanding such as Energy Star. So it's a bit of a different arrangement. We'd have to look at that more carefully. I can't answer that with certainty at this time.
MR. BROOKMAN: Ed.
MR. OSANN: Ed Osann, NRDC. I would make one important distinction here between the scope of use of this usage factor that EPA is using – is

employing, and how you're intending to use it here. The DOE standards under NAECA apply to all water closets. The EPA Water Sense specification applies to tank type toilets, which not exclusively, but primarily are the product of choice in residential settings. Valve type toilets are not covered by the Water Sense specification and are used almost exclusively in commercial type settings.

I think there is little data in the literature about the usage factors for dual flush in a commercial setting for a valve type toilet, and what information there is suggests that the frequency of the reduced flush is substantially more limited. So I think DOE needs to take this into account before simply applying this across the board for all products that are covered by the DOE standard. Certainly more data would be helpful, meaning more research would be helpful, in both the residential and the commercial usage of these products. And if DOE or its contractors could participate in that, that would be great.

MR. BROOKMAN: That was the obvious question. Is there data out there? Is there data to be obtained? Does it exist? Several individuals shaking their heads. They don't know. Laura, do you

want to comment here?

LAURA: I just wanted to make sure I understood. So the dual flush toilets in the commercial setting, are they both tank type and the flushometer or – I just want to make sure I understand what –

MR. OSANN: Well, tank type toilets can be installed in commercial settings. They can be installed in both. They're predominant in the residential sector, but they are certainly used in some commercial applications. Valve type toilets are used almost exclusively in commercial applications --

LAURA: And they're dual flush –

MR. OSANN: -- occasionally in some high rise residential.

LAURA: They're dual flush commercial valve toilets.

MR. OSANN: Yes.

LAURA: Okay.

MS. MCMORDIE: Typically diaphragm flush valve dual flush toilets. There's one study if I could comment on, a study that was done that's out on the Alliance for Water Efficiency's website, that looks at water use of dual flush toilets. So it is not a DOE-commissioned study, but there is some data

on commercial setting for dual flush toilets. There's also a study done by PNNL a while ago on dual flush toilets when it first came out in the early 2000s in a residential setting, and that actually is what set the 1.28 gallon per flush – was the result of that study. So there is some data out there on this, but I just wanted to mention it.

MR. BROOKMAN: Is there any additional data gathering currently, or is what you have what you have?

MS. MCMORDIE: Would you restate that?

MR. BROOKMAN: Is there any additional research being done presently?

MS. MCMORDIE: Not that I know of.

MR. BROOKMAN: Okay. We have several –

MS. MCMORDIE: It could be, though. There could be somebody on the webinar that might know.

MR. BROOKMAN: Well, two individuals have raised their hands. We're going to hear from Shawn Martin first and then from Daniel Glieberman. Shawn, please proceed.

MR. MARTIN: Shawn Martin, International Code Council. Daniel Glieberman is with Sloane Valve, so he may be able to speak better to the availability of data.

Two things I wanted to address. The first was the fact that there are two aspects to be considered when looking at these data and these studies. And the one is the theoretical water consumption which is based on the frequency of various usage types. And the second pertains to behavioral. And that's information because the awareness of the individual on the proper usage of the equipment is critical, and so I would urge that any data that's reviewed not only with respect with what could be done, but also through the lens of behavioral aspects as to the knowledge of the individual in the proper operation of the device.

The second point I wanted to make and wanted to put on the record is the fact that there are now available, another type of device, a subset, and that is retrofit dual flush device, which allows an older toilet that consumes – that is a single flush toilet, to be retrofitted with a dual flush device. They're marketed – several are marketed as being universal, meaning it can be applied to many different manufactured devices, and the DOE may wish to consider whether any of these requirements should apply to that circumstance.

MR. BROOKMAN: Okay, thank you. Daniel

Glieberman, you're next. Please say your organizational affiliation.

MR. GLIEBERMAN: Thank you. I don't know if you hear feedback or not.

MR. BROOKMAN: We can hear a little bit of feedback, but you're coming through clear, so keep going.

MR. GLIEBERMAN: Sloane Valve Company. I want to reference first of all the DOE's statutory or regulatory authority. My understanding and my comment on this specific issue would be that 1992 was water closets not to consume more than 1.6 GPF is really what should be considered here, as PMI I think noted and some other manufacturers may have noted. There's really no need to develop a separate test procedure to measure average representative water use of a dual flush water closet, because the focus of this rulemaking should insure that any water closet doesn't exceed the maximum. I think there's been some really good comments about data and the need for additional data. As one manufacturer focused primarily in the commercial sector, we would support additional data gathering, but we don't think that it's relevant for this rulemaking where water closets are intended to make sure that they comply with the 1.6 maximum GPF.

This goes to other comment, including Shawn's regarding behavioral aspects of these types of fixtures. And I think that if, in fact, there is to be a standard or a testing for the dual flush, it should be, as another commentator mentioned, … water closet such as ASME, the National Standard Development Process that insures that all stakeholders are represented. Thank you.

MR. BROOKMAN: Thank you. We're going to hear from Lucas Adin next, and then after Lucas, we're going to hear from Heidi Havenstein and then back to Shabbir. Lucas.

MR. ADIN: I just wanted to offer a brief response to the last comment. This is really more of a point of clarification. We have it on this slide and it is discussed in the NOPR, but we might have caused a little bit of confusion with this particular topic. The intention with proposing the use of this test method really doesn't have any bearing upon measurement of the maximum flush volume. It is correct that the 1.6 gallons per flush for water closets is the statutory standard, and it will remain the standard and the test method for verifying that that standard is met will still be the existing A112 – well, in this case we're proposing it to be the

A112.19.2 2008, essentially the same method as before. So the value of water consumption that's reported to DOE to insure that any given product, whether it's a dual flush toilet or a conventional water closet meets that standard will be the same. It's still the maximum flush volume.

MR. BROOKMAN: Okay. You may – some individuals may wish to raise their hand to follow on with that comment, but Heidi, you're next. Please say your organizational affiliation.

MS. HAVENSTEIN: This is Heidi Havenstein from Energy Solutions and the California Investor-Owned Utilities. And this is actually – I think Lucas just may have clarified this, but the question was can you clarify if you use the bridge method that the full volume flush does not exceed 1.6 gallons per flush. The alternative would be the average of two volume flushes in a .. bowl per flush.

MR. ADIN: Yes, this is Lucas. I can confirm that it will still be, for certification purposes, it is still the maximum flush volume in the full flush mode. The intent with proposing this method – it will not be required if we adopt it, it is really more of a means to permit manufacturers to make representations of that average use, but it's not for

certification purposes.

MR. BROOKMAN: Okay. Thanks for the question. Shabbir, you're next.

MR. RAWALPINDIWALA: I had the same comments that Danny did, so thank you.

MR. BROOKMAN: Okay. Thank you. Okay, then – yes, Ed Osann.

MR. OSANN: With regard to the utility of incorporating a usage factor in for dual flush toilets, it was noted at the outset that DOE is conducting this rulemaking because it has a responsibility for a periodic review of test procedures. DOE also has a statutory responsibility now for periodic review of standards, and if the standard were subject to evaluation, a test method that credited dual flush toilets with some additional savings based upon the ratio of high volume to low volume flushes, could be a foundation for such a standard revision without having to reopen the test procedure at that time. Is that a fair statement?

MR. ADIN: This is Lucas Adin. I think that's something that we have to look at a little more carefully. I mean we're certainly interested in receiving comments, perspectives, on that issue and any views on any impacts or benefits that might

provide. That's something that we need to look at separately.

MR. BROOKMAN: Thank you. Additional comments on these issues as you see them on slide 22 before we move on? Okay.

MS. MCMORDIE: So now we're moving to prerinse spray valves. It has been mentioned now a couple times by Lucas, so I'm just essentially reiterating something that has already been stated today, that the ASTM standard was reapproved in 2009 and DOE is proposing to incorporate by reference the new test procedures for commercial prerinse spray valves, or the new standard which has the same test procedure. So the comments that are requested are on the inclusion of this 2009 ASTM standard. Any questions related to that? Okay.

Now we're moving to the design requirements. Is there a question.

MS. SALMON: Uh, no. This is Stephanie Salmon. I'm with Plumbing Manufacturers, that we agree strongly with the adoption of the ASTM F2324 standard in its entirety without any edits or modifications. Again, this was thousands of hours of effort in review from manufacturers, government agencies, and others here at the table who were all

interested parties in approving this. So any deviation from that standard would create confusion in the marketplace.

MR. BROOKMAN: Okay. Thank you for that comment. Thank you. Ed Osann.

MR. OSANN: This is Ed Osann. The ASTM standard is currently under revision, is it not?

MS. MCMORDIE: It's currently under revision?

MR. BROOKMAN: Are you saying yes?

MS. MCMORDIE: I was asking my colleague.

MS. WILLIAMSON: (off mic) I believe it is currently under revision, yes.

MR. BROOKMAN: Jennifer says she believes it is under review.

MR. OSANN: I believe it's being balloted. It's far along in the process, where there are proposals being considered.

MR. BROOKMAN: Stephanie, yes?

MS. SALMON: Yes.

MR. BROOKMAN: Stephanie says yes. Keep going.

MR. OSANN: And I understand that while part of the revisions relate to a revised cleanability test, there are also changes proposed in the flow rate

test as well. So DOE should be aware of the status of the revisions of this test and consider the alignment of the scheduling between the finalization of the ASTM standard revision and the completion of this rulemaking.

MR. BROOKMAN: Okay. Stephanie, do you wish to comment here? No? No comment. Okay. Thanks for that information.

MS. MCMORDIE: So now we're going to move to the design requirements for showerheads. So DOE is retaining – yes.

MR. BROOKMAN: Let me put you on hold there. We have – Larry Himmelbloud has raised his hand and perhaps it's on this subject, before we move on. Larry, you're on.

MR. HIMMELBLOUD: Thank you. This is Larry Himmelbloud from Chicago … I could probably confirm that the EPA Water Sense is working with ASME and ASTM on a revision to the F2324 standard. Even the draft that is being finalized … so there's some more work to be done to revise this standard, specifically … different … test. Also, I believe that the federal law only addresses the flow rate and not …

MR. BROOKMAN: Okay. Thank you. Larry, the last bit of your statement kind of got garbled here.

Could you restate that again, please, just the last sentence.

MR. HIMMELBLOUD: I said I believe the federal law only applies to flow rate and not cleanability.

MS. MCMORDIE: That's correct.

MR. BROOKMAN: Okay. Thank you for that clarification. So now we're going to move on. Kate.

MS. MCMORDIE: So DOE is retaining the design requirement for showerheads which states that showerhead – the flow control insert in the showerhead has to be mechanically retained. And mechanically retained means that with a force of 36 Newtons or eight pounds or more is what's required to remove the flow control insert. It's in a new section of the 2011 standard, the ASME standard. It's in 4.11.1 now. The major unit of measure in the ASME standard is 36 Newtons, but DOE is proposing to maintain eight pounds force as a primary unit, just to maintain consistency with the current design requirements, so really no changes there. The ASME standard has switched over to SI units, but DOE is going to use eight pounds force. They're essentially the same force.

DOE did a little investigation here to see if there's a standard procedure for the removal of the

flow control insert, and there was not a standardized approach that was found in the industry. And that is because of the way that the manufacturers make these products is that the flow control inserts are inserted differently in different types of products. And so therefore, the testing laboratory that does this test has to be fairly creative at time to either do a pushing or pulling or even a torque force on the flow control insert to remove it. So there's really no industry standard on that.

So DOE is requesting comments on the eight pounds force required to remove the insert, and also the test procedure that is used for that. So any questions, comments on this? I think, Ed, you were saying something earlier that you had a question on this one.

MR. OSANN: Yeah, this is Ed Osann with NRDC. I think this is a significant gap in the ASME test procedure. While this requirement has been in the standard for a long time, the lack of an effective test procedure for certifying compliance has been evident by the marketing of products that allow for, and in fact promote, easy removal of the test restrictor, the flow restrictor. I've seen products in the marketplace at retail, where the outside of the

packaging promotes the ease of removal of the flow restrictor for, quote, “cleaning” close quote. So clearly some manufacturers have sought to gain competitive advantage by the ease with which the restrictor is removed. So this is a gap that really should be filled in the test procedure.

MR. BROOKMAN: Okay. Thank you. I’m looking over there to Marcus, are we doing okay? Shabbir would like to comment. Shabbir, you’re next.

MR. RAWALPINDIWALA: Yes, regarding the retaining of the flow control, it has been left like that to allow manufacturers various designs to incorporate in the showerhead. If the whole test were to be standardized, it will restrict innovation and design. As regards to Ed’s comment that the manufacturers are showing on the carton in the retail stores how to remove the restrictor, no reputable manufacturers in the United States or from Europe are doing that. There are a lot of overseas manufacturers that are not reputable that operate from the garages, and sell them, and there’s no way of monitoring or controlling them.

MR. BROOKMAN: Okay. Thank you. Other comments on this subject. Ed Osann.

MR. OSANN: Yeah, this is Ed Osann. I think

the purpose of having a written test procedure is to be able to facilitate verification, certification, and enforcement if necessary.

MR. BROOKMAN: Okay. Shawn Martin's in the queue.

MR. OSANN: Oh, and just one other point with regard to limitations on manufacturers design, creativity and flexibility, just as the ASME standard has had – for some time has had alternate test procedures for measuring the flow rate, it's certainly conceivable that a test procedure regarding the force -- to verify the force of removal of the restrictor could have alternative approaches, depending upon the nature of the installation of the restrictor itself.

MR. BROOKMAN: Thank you, Ed. Now we're going to Shawn Martin. Shawn, you're up.

MR. MARTIN: This is Shawn Martin from ICC. I think there may be some confusion on the point of whether manufacturers provide information on removal of these devices. There is an inherent conflict between the need to retain the devices and also the need to provide a means of repair. And it's very common for manufacturers to provide exploded views of their devices for the purposes of indicating part numbers and repair parts and procedures. So we may

need to recognize that if we make it difficult or impossible to remove these flow restrictors that the devices – if the flow restrictor becomes clogged, will become disposable in that circumstance, and that will have cost implications for the marketplace. So again, I'm not advocating for one position or another, but just would call to your attention that repair issues also come into play, even for manufacturers in home garages.

MR. BROOKMAN: Okay. Thank you. Final comments on this subject?

Proposed Changes to Product Definitions

MS. MCMORDIE: Great. So now we're moving on to Definitions. So DOE is proposing to add some new definitions that are in the ASME, the current ASME standard for the 2011 – the 18.1 2011 and 19.2 2008. And those are accessory, body spray, dual flush water closet, and fitting.

These definitions are to provide more clarity in DOE's coverage of the products, as well as conforming with industry standards. I'm not going to read them verbatim unless – would that be helpful? I don't think they're needed to be read – everyone can see them on the screen, and folks on the webinar, they

see this, right?

MR. BROOKMAN: That's correct.

MS. MCMORDIE: And then DOE is also proposing to add a hand held shower definition as well, and this is actually based on the basic definition that's used by Water Sense.

MR. BROOKMAN: So let's just leave that slide there for everyone to read for a moment, and then we'll see if we have comments. Ed Osann.

MR. OSANN: The slide doesn't include the definition of showerhead.

MS. MCMORDIE: Yeah, that'll be on the next slide.

MR. OSANN: Okay.

MS. MCMORDIE: These are new definitions, and showerhead is not a new definition, it's a modified.

MR. BROOKMAN: Someone via the web has raised his hand. Shawn Martin, you're next. Shawn? Maybe you're still muted. Shawn, we can't hear you.

MR. MARTIN: My apologies. Shawn Martin, ICC. Question for the speaker, Kate. Based on the definitions I see here, it is not clear to me whether a body spray should be considered a showerhead or not. The hand held showerhead definitions indicate that the

hand held showerhead is a showerhead. The body spray is more ambiguous. Is there any clarification that could be provided regarding whether the DOE intends that a body spray to be a type of showerhead?

MS. MCMORDIE: Yeah, that will be on the next slide, Shawn. We're going to talk about that.

MR. BROOKMAN: Let's go to that now, since that was also a question that Ed had, and we can return to this slide as needed. So to showerheads, then.

MS. MCMORDIE: Okay. So there is a definition of showerhead that DOE has in the CFR, and the NOPR is proposing – DOE is proposing to change the showerhead definition that actually takes the current ASME showerhead definition that was added to the 2011 version of the standard, but it's modified it to provide some clarifications on DOE's coverage of their product.

There's three basic things that have been added to this definition to help provide this clarification:

- That is that safety showers are not included in the definition;
- And hand-held showers – and this is pointing to Shawn's question – and body sprays are considered

a showerhead.

So DOE is asking for comments related to that as well.

MR. BROOKMAN: Yes, please.

MR. ADIN: Yes, just to add one item to that. We didn't put it in the slides here, but I had received a question about it separately, just to provide some contrast with the existing definitions, since we are amending it, or proposing to amend it. The existing definition for showerhead in the Code of Federal Regulations says, "showerhead means any showerhead, including a hand-held showerhead, except a safety shower showerhead." So this definition is being proposed as part of an effort to bring some more clarity to the meaning of the term showerhead itself, since the existing definition really does not do that.

MR. BROOKMAN: Okay. Ed.

MR. OSANN: Ed Osann. It was said that this definition draws from the definition of showerhead in the current ASME standard? I wonder if you could crosswalk us to the –

MS. MCMORDIE: I have it here, do you want me to read it?

MR. OSANN: Providing the – starting with the citation – the paragraph citation.

MS. MCMORDIE: In the – it's in the definition section of the standard which was actually -- ASME did not publish that and it was just a mistake, so I think they're – I apologize for not knowing the exact answer, but they're in the process of putting out an addendum on that.

MR. BROOKMAN: It simply was – it didn't make it into the final –

MS. MCMORDIE: First version.

MR. BROOKMAN: First version publication.

MS. MCMORDIE: Yes, of 2011.

MR. BROOKMAN: It was perhaps an oversight?

MS. MCMORDIE: Yes, it was an oversight.

MR. OSANN: So, just for clarification, the current version that you're citing to does not have a definition for showerhead in it.

MS. MCMORDIE: It does. It does have it. It will be included in an addendum. So it was – it went through a committee process, the showerhead definition was finalized, but it was – it wasn't included in the final publication out of just an error. So there is a final – ASME does have a final version of the showerhead definition.

MR. OSANN: Has that been made available for public comment?

MS. MCMORDIE: Yes, it went through a public comment period.

MR. BROOKMAN: And so do you have it there?

MS. MCMORDIE: Yes, I can read it.

MR. BROOKMAN: Let's read it.

MS. MCMORDIE: "An accessory to a supply fitting for spraying water onto a bather, typically from an overhead position."

MR. BROOKMAN: And that is what version?

MS. MCMORDIE: The 2011.

MR. BROOKMAN: 2011, okay. Stephanie?

MS. SALMON: Can we go back to the previous slide in regards to the hand-held shower. I just wanted to make a comment that for Pluming Manufacturers International, rather than adopting the definition of hand-held shower from the EPA Water Sense specification for showerheads, PMI is requesting that DOE adopt the proposed definition, "An accessory to a supply fitting that can be held or fixed in place of spraying water onto a bather, and which is connected to a flexible hose," which is being developed by ASME/CSA which is in the balloting process right now. We do agree with adopting the definition of accessory, but do not agree with the proposed revision that would consider a body spray to

be a showerhead for the purposes of regulatory coverage. A showerhead is an accessory, whereas a body spray is not. When the definition was being developed, it was noted that body sprays are not for bathing purposes, but for therapeutic purposes, and the definition reflects that. A body spray is not easily added or removed by the user like a showerhead that is mounted on the wall. And that is in our written comments that we submitted for the record.

MR. BROOKMAN: Okay. Thank you for that.

MS. MCMORDIE: Any other questions?

MR. BROOKMAN: Yes, pardon me. We have two individuals that have joined us via the web, and I had to be reminded. Shawn Martin is first, and then followed by Len Swatkowski.

MR. MARTIN: Shawn Martin from ICC. Thank you for going back to the previous slide, Kate. Revisiting my previous comment, in light of the definition for showerhead that includes body sprays and hand-held showerheads, I would recommend that the body spray definition be revised to read in a manner similar to that for hand-held showerheads where it clearly indicates that body sprays are considered a form of showerheads, where it would read “body spray showerheads means a showerhead for spraying water.”

I'd also like to express my support for the revised definition which reflects the definition I advocated for on the ASME committee but was not ultimately reflected in the final version.

MR. BROOKMAN: Okay. Any of you that have been involved in legislative matters will tell you, things like definitions and the written work can get complicated. So I just want to be very clear that your comments here are very important. They're captured on the record, but you really need to send in written comments to the Department if you want to affect these definitions. So please send in your written comments, not to diminish your capacity to speak now. Len Swatkowski, you're next. Please say your organizational affiliation.

MR. SWATKOWSKI: This is Len Swatkowski from Plumbing Manufacturers International. Stephanie Salmon pretty much stated what our comments were, but in deference to Mr. Martin's comments, I would note that the development of American National Standards is done with thousands of hours of effort and time, and like you said, pouring over a single word can take hours sometimes. It's not a unanimous decision. It's a consensus standard and it goes through a public review, so I would, you know, we have definitions for

all this and body spray is a therapeutic device. It is not meant for showering. We've defined this and discussed this within committee for years now, so I would ask that as we move forward we give some credibility to not only the standards as they sit today, but moving forward, we would encourage all government agencies and all interested parties to help in the development of these standards, to make them as accurate and as flexible as possible. Thank you.

MR. BROOKMAN: Thank you, Len. Now we're going to hear from Shabbir.

MR. RAWALPINDIWALA: Just wanted to inform everybody that the definition of showerhead has been published and it was published as a supplement to the existing standard, dated November 2011.

MR. BROOKMAN: Okay. Thank you. So we have had good comment on these different definitions proposed to be added to 10 CFR 430.2. Additional comments on these proposed definitions and modifications? Do you have any additional question you want to pose or are you all set?

MS. MCMORDIE: I'm all set.

MR. BROOKMAN: Okay. Let's keep going, then. Ed Osann, before we proceed.

MR. OSANN: Yeah, Ed Osann with NRDC. I'd

like to enter into the record that we support the incorporation of body spray into the definition of showerhead and coverage of body sprays under the standard.

MR. BROOKMAN: Okay. Thank you. We're going to move on then to basic models definition. We're at a point now where in this general time frame we could take a break, but we're very close to the finish line, so you tell me whether we're due for a break or whether we should just keep going for the next half hour or so.

MR. ADIN: I'm comfortable with moving on, if it's acceptable to the group.

MR. BROOKMAN: Yes, I think I'm casting my eyes around the room, everyone seems inclined to keep going.

Proposals Regarding Basic Models and Statistical Sampling

MR. ADIN: Okay. Great. So we'll press forward here. The next item that we're going to discuss is basic models, and as we note here, DOE is not actually proposing to make any changes to the existing definitions of a basic model of any of the products, and for anyone participating today who is not generally aware of what that means, the basic

model definitions essentially just cover what DOE considers as a basic model for the purposes of certification. So individual models are all subject to the standard, but they only have to be certified individually if they differ in a way that affects their water consumption from a design standpoint. So products that differ in superficial features like color, or other esthetic characteristics are not – they can all be considered the same basic model. The definition itself is more clear about what that means, but that's essentially the gist of it.

So for these products, we're not actually proposing to change any of those definitions, but we have received questions from manufacturers about how to appropriately group individual models as basic models in the water closet and urinal categories for the purposes of certification. And the reason this came up is because water closets and urinals can be assembled as pairings of the porcelain or ceramic fixture and a flushing device. So in the case of a gravity water closet, it would be the bowl and the tank and flushing mechanism. For urinals and flush meter type devices, it's the bowl and the flushometer device. And sometimes there'll be a bowl from one manufacturer and a flushing device from another, or

something like that. So the purpose here was to provide – and we explain this in much greater detail in the proposed rule, but just to ensure that those things can be reported as certain pairings and grouped together that way for purposes of certification.

So hopefully the proposed rule itself is clear enough about that, but we're certainly interested in any comments that any of the participants or others have about that particular aspect, about what DOE accepts for certification purposes on those products.

So I don't know if there's anything people have questions about or comments on right now, but written comments, obviously, are welcome.

MR. BROOKMAN: Ed.

MR. OSANN: Ed Osann with NRDC. Reviewing the text of the NOPR on this subject, it was really unclear as to how DOE expects the pairing process to be worked in practice for the valve/bowl combination. There's language in here indicating that the manufacturer – for the water closet bowl and the urinal – I'm reading from 317 – page 31748 of the Federal Register notice, the center column – "and that it could not be paired with a flushing device or tank that would provide a higher flush volume and

still function properly." It's as though DOE expects that a valve that would operate with say, a volume that was 20 percent above the standard, would somehow, when combined with a bowl which has no moving parts, would somehow prevent that bowl from functioning properly.

MR. ADIN: Well, I can say –

MR. OSANN: It's not clear what functioning properly means here.

MR. ADIN: Right. I understand, the point's well taken. I mean that's something that we can try and explain more carefully in the final rule. Certainly if there are others who have points about that or information about how that aspect bears upon this issue, I mean, obviously, we're interested in that and we'll consider it.

The intention really was to try and get to a point where manufacturers are able to certify a product as – representing in their certification that the maximum water consumption that product is designed to consume. So if it could physically be paired with another flushing device which provided a higher volume but caused it to overflow, or not function at all as designed, that's sort of our general understanding of the framework within which this would work. But if

that's flawed or if it simply won't work for the purposes of accurately capturing the true maximum water consumption of a product, we'd certainly be interested in knowing what those factors are, or what things we should consider in adequately explaining that to certifying organizations or to manufacturers for the purposes of covering this issue.

MR. OSANN: Well, we will provide some comment on that for the record along the lines that we have here today. A follow up question. It is also not clear whether a valve alone is a basic model. New valves are provided in commerce, shipped without bowls, perhaps for replacement parts, perhaps to be married up on a job site with a bowl.

MR. ADIN: Right. It's a good point. I don't know that that's something that we adequately evaluated in the NOPR. At least we didn't discuss it in detail. I mean, the general approach as proposed treats the basic model as the combination of those two items, the bowl and the flushing device, whether it's a flushometer or a tank or whatever it is. But if we need to evaluate that more carefully and consider those replacement devices or something to that effect, that's something that we'll certainly look at more carefully.

MR. BROOKMAN: Daniel Glieberman has requested a chance to speak. Daniel, you're next.

MR. GLIEBERMAN: Thank you. Hopefully there's not a lot of reverberation. But again, Daniel Glieberman, Sloan Valve. I think Ed's comment was instructive. I would also go back, however, to my comments previously, when the dual flush conversation was mentioned, my understanding is that DOE's regulatory authority here is to establish and certify water closets that use no more than 1.6 gallons per flush, and urinals that use no more than 1.0 gallon per flush. So this conversation in the NOPR on page 31748 regarding theoretical examples of water closets, and I guess it could also be applied to urinals that go lower than that requirement is very informative, but I'm not sure that it's within DOE's actual regulatory authority. Because manufacturers are going to certify that their products do not exceed the 1.6 and the 1.0 respectively.

I think it's also instructive to look at what Water Sense has done with flushing urinals, where they do require manufacturers to provide testing for lower than the 1.0 per the Water Sense specification. That's a voluntary program. It's not required, and I would suggest that this discussion of a basic model

also leans more towards the voluntary rather than the actual requirement is under DOE's purview. Thank you.

MR. BROOKMAN: Thank you. Joanna.

MS. MAUER: Joanna Mauer. Just a couple of clarification questions. So certification responsibility would lie with the manufacturer of the bowl and regardless of whether they're pairing a valve that they manufacture or a valve that another manufacturer produces. And on the other hand, if you're a manufacturer that's just producing valves, you would have no certification responsibility to DOE. Is that fair to say?

MR. ADIN: I think that's something that we might have to look at a little bit more carefully. Our – I mean in the most general sense, obviously, the statutes and our existing regulations cover water closets, so that doesn't offer much of a clue about whether the valve is a covered product and thus has to be certified. But I understand that there is confusion about that and I understand why. So I think that's something that we just have to look at more carefully. And, you know, to the extent that there are particular views from anyone in this group, manufacturers or otherwise, about the appropriate way to do that or how the market supplies these products,

all those things are helpful to us in considering that aspect.

MR. BROOKMAN: Ed?

MR. OSANN: Ed Osann. In the Federal Register notice, DOE just makes the clear point that water consumption of a given model of bowl for a water closet or urinal can be directly affected by the specific flushometer valve or tank type flushing device that's paired with the bowl. So it seems that it's really incumbent upon DOE to find a way to verify that products that are shipped to commerce can – will reliably meet the standard, given what you have found about the variability of the flush volumes based upon the pairing.

MR. ADIN: Right. So I should probably reiterate perhaps a little bit more succinctly, but what's in the proposed rule is a reflection of DOE's best understanding of how these products function, of how the market is organized and that sort of thing. So it's entirely possible that we have a flawed understanding or reasoning that is not fully reflective of how things are – how things actually work from a technical perspective, or as far as how products are actually paired.

So if there are certain aspects that we need

to consider that we haven't, and this proposal in the eyes of anyone in this group reflects a gap in coverage or in some way may not completely account for any of these variabilities, then again, that's something, of course, that we'll consider. And we welcome any more specific comments about it.

MR. BROOKMAN: Okay. Other perhaps final comments on basic model definition? Okay.

MR. ADIN: So the next item we have is on the statistical sampling and rounding requirements, and these address the numbers that are reported to DOE for the purposes of certifying a given basic model of any of the products that we're discussing today.

So just as a general overview, products are tested using the DOE test procedure as individual products and manufacturers have to test at least two of each basic model as part of their statistical sample in order to come up with a number that's representative of the average water use for that product. And there's a mathematical statistical plan for each individual product in the regulations. Those have been around for quite a while. We're not proposing to change them. Of course we're interested in any comments about the appropriateness of those statistical methods, the confidence intervals, all

those sorts of things. Are they still reflective of the accuracy of the test or the range of variability that you get when you test these products? Any of those things are of interest to us. But as I said, we are not proposing to change them now.

And then we also added some specific rounding requirements for the final value of water consumption that's reported for each product. The reason we did that is because the test procedure itself does have some rounding requirements but then of course you put all these – the individual models you tested, that value you put through this statistical sampling calculation, whether it's just an average or a confidence interval, and then that gives you another number. So we want to make sure that that number is rounded appropriately when it's reported to DOE. So those are in the proposed rule, and we welcome any comments about those.

MR. BROOKMAN: You can see the details listed there in comment box number eight. No questions or comments? Okay.

MR. OSANN: Ed Osann, one question. For – when a manufacturer has a valve/bowl combination and is testing different pairings, do these requirements apply to the testing of each pair?

MR. ADIN: So that depends somewhat upon how the manufacturer chooses to group those pairings as a basic model. If they're all grouped together as a single basic model, then these requirements apply to the pair that they tested as a representation of the water consumption of that basic model. If they choose to report them individually, then they would have to apply these sampling procedures to each pair that they test and report.

MR. BROOKMAN: Shabbir has raised his hand. Shabbir, you're next.

MR. RAWALPINDIWALA: No, I meant to lower the hand.

MR. BROOKMAN: Okay.

MR. RAWALPINDIWALA: Lowered it. It was not raised.

MR. BROOKMAN: Sorry, we misinterpreted your signal.

MR. RAWALPINDIWALA: My thing shows red.

MR. BROOKMAN: Okay. So then any additional comments on statistical sampling and rounding requirements?

NOPR Analyses

MR. ADIN: So our next item is just an

overview of the NOPR analysis, and Jennifer Williamson will be discussing this part.

MS. WILLIAMSON: So one of the reviews required by the Small Business Administration is to look at whether or not the changes proposed in the test procedure are going to impact a substantial number of small entities from a cost standpoint. So we did an analysis and identified two of the NAICS codes that could possibly manufacture these products: the fixture fitting and trim, and then the china manufacturing. And you can see here that for the fixture fitting and trim manufacturing, it's 500 employees or less to be considered a small business, and for the china, it's 750 or less.

Using publicly available information, trade associations, Dunn and Bradstreet reports, product databases, and manufacturer websites, we identified a total of 83 businesses that were considered – that fell into these categories that actually manufactured the products that are being covered in the rulemaking. And of those, 48 were considered to be small businesses, which is 58 percent. And even though 58 percent is a significant number, based on the changes, that DOE has determined that there aren't enough alterations to the testing procedure to have a cost

impact.

So DOE is proposing to certify that there are no substantial impacts to a significant number of small businesses. And we'll take questions or comments.

MR. BROOKMAN: No additional comments or questions? Okay.

MS. WILLIAMSON: I think Lucas is going to finish us up.

MR. BROOKMAN: So that takes us then to the concluding slide and as I promised at the outset, there is yet another opportunity for anyone to make closing remarks, raise issues that haven't been raised fully so far. Stephanie.

MS. SALMON: Oh, I just wanted to thank everyone at DOE for doing this today. It was very helpful. I know that PMI will go back and be able to expand on some of the things that we've already commented on and help clarify, so thank you very much for doing this today.

MR. BROOKMAN: Thank you. Ed Osann.

Closing Remarks

MR. OSANN: Ed Osann with NRDC. A couple points that didn't – that we wanted to make that wasn't quite sure where they fit in during the flow of

the presentation.

One has to do with regard to the fixtures, field adjustability. The Water Sense specification provides for the testing of field adjustability with a separate set of maximum flush volumes with the components set at their maximum. It's – we think it's a good idea to test field adjustability, but we don't see that DOE is really authorized to provide for a procedure that will allow the product to perform above the maximum flush volume specified in the standard. So this is an area that I think could use some attention at this point in the test procedure, particularly as you consider the elements that are in the Water Sense specification, or that support the Water Sense specification. And as those elements are also being considered by ASME for potential incorporation into the next version of this standard.

Another issue that hasn't come up has to do with phantom flushes or superfluous flushes that result from sensor operation that is, you'd have to say, faulty. And there is no current test procedure either adopted by DOE or Water Sense, or ASME, regarding the accuracy of sensor operation. The effect of that is to allow for substantial excess usage per user experience you might say, and this is

not just an ancient history. There are plenty of instances of relatively new products that perform in this way. There's also literature indicating that, in before and after comparisons of facilities that have had sensors installed, that water consumption in water closets has gone up like 50 percent. So this is a gap in the current test procedure, that we think DOE ought to consider addressing.

And one way of considering some of these issues – and leakage is another issue that's been well known for a long time in the industry, both manufacturers and also the utility industry, that a lot of toilets leak for a variety of reasons. There is a leakage test that ASME has adopted in ASME A112.19.5-2011, flush valves and spuds for water closets, urinals and tanks – has a leakage procedure that DOE could consider incorporating by reference as well.

This leads to kind of a larger question of how the standard is expressed and whether a test procedure could be developed that would perhaps be based on annual water use with some assumed usage factor that would capture losses between the intentional user-activated flushing events, somewhat analogous to an annual requirement for dishwasher

that's based upon a DOE assumed numbers of annual dishwashing events, and the tested results of power consumption that take place between those purposeful user activated events. The same with clothes washers.

And as DOE has responded to the directive with regard to power losses, there's really an analogous area of concern regarding the water consumption that is above and beyond the specific user-activated event. And this might be an appropriate time for DOE to consider whether a test procedure could be framed up that could capture more fully the water consumption of these products, which is really what it's all about.

We'll provide some additional recommendations along those lines for the record.

MR. BROOKMAN: Additional comments as we move towards closure? Shabbir, your comments please.

MR. RAWALPINDIWALA: Yes, Shabbir Rawalpindiwala, Kohler Company. The ASME/CSA harmonization committee and subsequently the respective technical committees, as recent as last week of the ASME, they sanctioned the incorporation of the EPA Water Sense water closet specification into the standard, so that will be balloted, and hopefully when the new edition of the 19.2 standard will be

published in 2013, it will have the requirements of EPA Water Sense which will include the maximum capacity of the water closet tank, and the adjustability also.

As regards to the leakage, the 19.5 standard which is for trim, had that since about close to ten years ago, the leakage rate where the flapper has to meet the chemical requirement resistance test, which has considerably almost stopped the leakage of the water closets due to the faulty or deteriorated flappers. Thank you.

MR. BROOKMAN: Thank you. That's it. Okay, then, back to Lucas.

Next Steps and Closing Remarks

MR. ADIN: Thank you all for your comments and participation today, we greatly appreciate it. This is all very helpful to us as we move forward towards finalizing an approach for these products and the test methods. So we of course encourage you to submit written comments and include as much detail as you're able about your views, and any other data or analyses that might help us adopt an appropriate final approach for these products.

There's some information here about how to submit the comments. This is also in the NOPR notice

itself. And some points of contact and places to find information about them. So that's about it, unless there are any other –

MR. BROOKMAN: I would make one more comment. For those of you that are not familiar with the Forrestal Building, we didn't take a break so I didn't say this. You must wear this visible, these name badges, while you're walking around the Forrestal building. There are rest rooms on both ends of the hall if you'd like to head in that direction now, and if you're going to hang around here for lunch, then there is a Subway shop on the ground floor and there's a big cafeteria about 100 yards in that direction. Go down to the ground floor and go that way if you're not leaving.

So I'll just echo Lucas' thoughts and say thank you. We had a very productive meeting. Thanks for your participation, and safe travels.

MR. ADIN: And thanks to all the web participants for you participation as well.

MR. BROOKMAN: That as well.

(Whereupon, at 11:00 a.m., the meeting in the above captioned matter was adjourned.)

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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before:

U.S. DEPARTMENT OF ENERGY

In the Matter of:

PUBLIC MEETING ON TEST PROCEDURES FOR PLUMBING PRODUCTS

Were held as herein appears and that this is the original transcript thereof for the file of the Department, Commission, Board, Administrative Law Judge or the Agency.

Further, I am neither counsel for or related to any party to the above proceedings.

Wendy Greene

Official Reporter

Dated: July 27, 2012