UNITED STATES OF AMERICA

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

PUBLIC MEETING

SUSTAINABLE DESIGN STANDARDS

FOR FEDERAL BUILDINGS

U.S. Department of Energy
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Washington, DC 20585
Room 8E-089

Wednesday
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(FEMP)

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I N D E X

P R O C E E D I N G S

9:07 a.m.

MR. RABA: Well, good morning and welcome again to the Department of Energy to today's public meeting on Sustainable Design Standards for Federal Buildings. Let's get started.

Today's meeting is important because the Department would like to hear your comments and your views as it's related to sustainable design standards for federal buildings. The purpose of today's public meeting is two-fold: to provide an overview from departments as to proposed rulemaking that would revise these performance standards in construction of new federal buildings and major renovations of federal buildings and generally the proposed standards to establish certain sustainable design requirements for new federal buildings and renovations to federal buildings. But equally important is the input that we gather from you, interested parties, gathered here today and in your written comments that you wish to submit. And the Department of Energy needs to hear from you any comments, information, and data that you provide would be most helpful and most appreciated.

So, moreover, we don't have time to solve the issues today, but we intend to listen to all the views,

gather the facts, make clarification as needed -- the rulemaking process takes time, but DOE strives to ensure that all comments are fully considered.

I'm Jim Raba and I will be facilitating today's public meeting. I am your neutral servant. That is, I will not evaluate or contribute any of my own ideas. I will try to keep us on task, on focus and give everybody the opportunity to speak. Kind of shepherd the process, if you will. And I see some familiar faces and some new faces certainly. So by a show of hands how many are here for the first time?

(Showing of hands.)

MR. RABA: I see a majority of hands, for the record. So this is a good time then for introductions, if you would, please. Please state your name clearly and the organization that you represent or with which you are affiliated.

We are making a transcript of today's public meeting and that will be available later on. So if you would each go around the room in turn. As you see before you, at the tables, microphones. The green light is on, so snuggle up to the microphone. Also in the back we have standing mikes back there. Again, in turn, please step to the mike, speak your name clearly for the record and the organization or company that you

represent here today.

And later during the day you will receive a copy of the attendance list of all who have registered for the meeting and hence the business cards you dropped off at the reception desk. So let's go around the room at this time, starting here.

MR. NASSERI: Cyrus Nasseri, Project Manager, DOE, Federal Energy Management Program.

MR. KIDD: Richard Kidd, Program Manager of the Federal Energy Management Program.

MS. APPEL: Margo Appel, Department of Energy in the Building Technologies Program.

MR. CALAMITA: Chris Calamita with the Department of Energy's Office of General Counsel.

MS. GRACE-TARDY: Ami Grace-Tardy with the Department of Energy, Office of General Counsel.

MR. MONTGOMERY: Ross Montgomery, ASHRAE, Vice President.

MR. BLAKEY: Allen Blakey with the Vinyl Institute.

MR. APPLE: Todd Apple, Director of Government Programs for the Dupont Company.

MR. THOMPSON: Mike Thompson with Manufacturer Ingersoll Rand representing the companies Trane, Thermal King, and Huspin which are all owned by

Ingersoll Rand.

MR. OTT: I'm Kevin Ott with the Flexible Vinyl Alliance.

MR. HALL: Bill Hall from the law firm of Winston and Strawn on behalf of the North American Coalition on Green Buildings.

MR. WEILAND: And I'm Rick Weiland with the International Code Council.

MR. RABA: In the back, please, first row start.

MR. STANLEY: John Stanley, Ingersoll Rand representing TRANE.

MR. RABA: Thank you.

MS. HARKINS: Erica Harkins, U.S. Fuel Cell Council.

MR. RABA: Okay. Thank you.

MR. NEUMAN: Justin Neumann, National Electrical Manufacturers Association.

MR. COOK: Keith Cook, Phillips Lighting and a member of NEMA.

MR. AMES: Good morning, Mark Ames with ASHRAE.

MR. READ: Good morning, Doug Read with ASHRAE, Washington, D.C. office.

MS. WALTNER: Meg Waltner, Natural Resources

Defense Council.

MS. HOCKSTAD: Melissa Hockstad, SPI, The Plastics Industry Association.

MR. BARRY: My name is John Barry. I represent the International Union of Operating Engineers National Training Fund. We are the stationary engineers that operate and maintain commercial facilities including government facilities.

MR. COLKER: Ryan Colker, National Institute of Building Sciences.

MS. BUNCH: Saralyn Bunch, Building Technologies Program, DOE.

LTC FOLLENDER: Lieutenant Colonel Saroya Follender, Air Force Sustainment Programs.

MS. FARLIE: Catherine Farlie, I work for the U.S. Air Force Civil Engineer.

MS. LAWRENCE: Good morning, Tanya Lawrence, U.S. Air Force Civil Engineers Energy.

MS. GROJEAN: Nora Grojean, I'm with the Air Force, Civil Engineer, Energy Branch.

MS. CHEUSE: Good morning, Emma Cheuse from Earthjustice.

MS. RALPH: Anna Ralph with Earthjustice.

MR. BALLO: Tim Ballo with Earthjustice.

MR. LEDGERWOOD: Brian Ledgerwood, U.S.

Department of Commerce, International Trade Administration.

MS. BLOCK: Good morning, Nadine Block with the Sustainable Forestry Initiative.

MR. LUBLINER: Mike Lubliner, Washington State University Energy Extension Program.

MR. GLOWINSKI: Robert Glowinski, American Wood Council.

MS. YERKES: Sara Yerkes, International Code Council.

MR. CARMEL: Dave Karnol, International Code Council.

MR. INDIG: (Inaudible) Harry Indig, Department of Energy, Building Technologies Program.

MS. RU: Ashley Ru, I'm in training for the NMSA.

MR. FELDMAN: John Feldman with Welfare to Energy on behalf of Calstar Products.

MR. RABA: Back here.

MR. LUCAS: Robert Lucas, Pacific Northwest National Laboratory.

MR. HALVERSON: Mark Halverson, Pacific Northwest National Laboratory.

MS. VALLEJO-MASTRIANNI: Luci Vallejo-Mastrianni, International Code Council.

MR. RABA: Did everyone have a chance?

Well, thank you, you're all going to Hollywood.

(Laughter.)

MR. RABA: We have some opening remarks from Mr. Richard Kidd.

OPENING REMARKS

MR. KIDD: Good morning, everyone. Thanks for coming today. We appreciate so much interest across the spectrum from private industry, academia and the various NGO interest groups. I would like to just briefly introduce -- put today's activity into context, if you will.

The proposed rulemaking under consideration today grows out of some of the statutory requirements contained in ESA of 2007. But all should understand that it's also occurring in the context of Executive Order 13514 which was signed by President Obama on October 5th, the Executive Order Federal Leadership in Environmental Energy and Economic Performance. Contained in that Executive Order is extensive reference to the guiding principles of federal leadership in higher performance and sustainable buildings. The Executive Order establishes greenhouse gas reduction as an integrating metric for federal

performance going forward. Be that performance in buildings, in fleet operations, in waste management, and this is linked to many of the other ongoing activities across the federal government as well as statutory requirements.

Today's proposed rulemaking will shortly be followed by a complementary activity on fossil fuel reduction in federal premises which is also called for by EISA and will be coming out shortly.

So I want all to understand that this is not a stand-alone activity but it's part of a continuation and evolution of the federal stance where it comes towards energy efficiency and greenhouse gas reduction, a federal evolution that is contained in statute as well as Executive Order.

We've set this up so that hopefully everyone in the room today who wants to will have the opportunity to speak, although time could be limited. And everyone is also encouraged and many of you have submitted more detailed written testimony which we appreciate and prefer. And all of the statements will be entered into the docket and addressed as we develop the follow-on rule.

Going forward the Department of Energy is going to make a few changes in our rulemaking process

with the aim of improving the coordination with some of the appliance and building standards that are also under development. So what's going to happen is that going forward the Building Technologies Program which is well represented here today will take over the final revisions and development of this rule as well as other facilities-related rules that apply in the federal sector while FEMP will continue to provide the coordination and agency support and outreach to the federal agencies that have such a vested stake in those rules and who will eventually have to implement them.

If there are any questions for me, I'm happy to take them now, otherwise we're not too far behind yet and we're only three or four minutes behind and maybe we can quickly turn over to our moderator and get back on schedule.

Again, thanks, everyone, for coming.

Introduction and Agenda Review

MR. RABA: And thank you. So let's run through today's agenda and talk about some ground rules, housekeeping matters and go straight into the overview of sustainable design standards for federal buildings. You should have a copy of today's agenda and other informative materials with you.

I understand that this information and the presentation slides and transcript will be made available on the DOE Federal Energy Management Program's website. Typically the website will have the transcript up there in about ten days to two weeks following the public meeting here today.

So, look at the agenda, it's pretty straightforward really. We have an overview, a presentation, we'll see how that goes and maybe take a break if there's time, depending on the flow of how today's meeting goes we're going to continue on or whatever. We'll be flexible there. Then we have comments from you, the interested parties who are here today. It is most valuable for the Department to hear your views and the information you can provide to the Department.

Lunchtime, more statements, and then possibly a break in the afternoon, and time for questions and answers to be sure everybody is heard, things are clearly understood and so we'll all feel comfortable. And some of the key issues you'll hear later on in the presentations initially will be fairly covered and aired and the Department will hear your views on them too. So, pretty straightforward. So we'll kind of take it step-by-step. So let's get started.

Questions about the agenda? Pretty simple, but we'll get into it.

The ground rules, we call them, well, actually they call them NORMS nowadays. These have been adopted over time. We kind of have a tradition with the Department of Energy, kind of tried and true things, keeping it flowing, get the most of our your time -- for your time. So you want to speak clearly into the microphone and say your name for the record. Keep the focus up here. And that is to please turn off your cell phones or put them on vibrate so as to not interrupt the proceedings. And if you have sidebar conversations, you're asked to limit them and if need be take them outside in the room back there or in the hallway. But keep the sidebar conversation please to a minimum.

Throughout listen as an ally. We're all working together for a good common purpose here. We are going to focus on issues not personalities. DOE wants to hear from you, your experiences and information and constructive comments from your own perspective on proposed parameters for sustainable design standards for federal buildings independent of any particular system. And we would ask you to limit comments about comments if you would, please.

And just know that it's okay to disagree. Raise your hand if you wish to speak so I can recognize you and I'll give everybody a chance. I will be queuing persons to speak, so everyone who wishes will be heard.

I recognize that your time is valuable and we want to keep it moving, keep up the pace. There's a lot to cover, so, please, hold questions until there's a logical break in a presentation, if you would, please.

And, another thing, participate. You're the reason for today's public meeting. And remember, there's still time, two more weeks, to submit comments. About two weeks for written comments. And in all things, please be concise and share the air time.

One more thing, if I mess up, please let me know right away so I can fix it and we can move on.

Thank you. Any questions so far?

(No response.)

MR. RABA: None seen. Again, today's meeting is to hear all views and gather information not to solve the issues or problems.

Some necessary housekeeping items before we start with our first presenter. Your visitor badges and security, be sure to display them at all times in

the building, it's a secure area, up high so that security can see you. Remember to wear them. If you go outside the building for any reason you will have to get rescreened when you come back in again.

The emergency exits are either the passageway here, there are stairwells, and they lead down and we would ask that you exit on the first floor, that would be the best way out.

The restrooms, either end of the passageway also.

A place to eat, very important, there's a snack bar directly below us and a cafeteria in the West Building. You can follow folks as they go when we break for lunch.

Coffee breaks and lunch are approximate times. So we can take them as convenient, but not interrupt a presentation or a flow of the meeting.

And, again, the coffee shop is directly below on the "G", the ground floor level. The cafeteria is in the West Building. Successful way is the E corridor, you don't have to leave the building, go under the street, take the building itself. We can go over that later on when we get to that time of day.

Before we leave today we give you an evaluation form to fill out about the content of

today's public meeting, some constructive things that are helpful there for the Department to look at for future meetings.

If you have a laptop computer, you probably got a receipt from security when they checked it in. Make sure you show the receipt when you check it out.

Questions?

(No response.)

MR. RABA: Your statements today, written comments, and any supporting documents would be most helpful. Mr. Cyrus Nasseri will be the presiding officer for today's public meeting. He will give an overview of sustainable design standards for federal buildings.

Overview of Sustainable Design Standards for Federal Buildings Notice of Proposed Rulemaking

MR. NASSERI: Thank you very much, Jim. I'm fortunate to have such a loud tone of voice that I don't need any speaker. Do I need a microphone?

MR. RABA: For the record.

MR. NASSERI: Oh, I'm right next to the court reporter here.

Anyway, thank you very much. Richard

introduced basically how the program is going to be handled in the future. And also what I would like to do at this point to appreciate or thank the rulemaking team.

This rule, as you all know, sustainable design of Federal buildings, there are so many items and issues involved in sustainability design of buildings and it wasn't one of the easier rules to draft. But for the last year or year and a half a team of general counsel, Chris Calamita here and Ami and also we're missing policy from Office of Policy, Mark Friedrichs, and he is not here, also contributed to the drafting of this rule.

Also a lab, PNNL, Mark Halverson and Robert Lucas, they were very much involved and very familiar with issues of the rule that we drafted. They are also very familiar with the building codes. And I am so glad to see so many faces here that I am very familiar with and I know them, ASHRAE or ICC and all other activities.

What I would like to do is to go ahead and give you overview of the rule that we developed/drafted and specifically identify from the draft rule what comments and items we specifically would like the commenters to comment, again, during the comment

period, the last slide, you can see that you have until August 12th to comment, midnight August 12th to receive your comments and all that. And also what you say today and the transcripts of this workshop or public meeting is going to be available later on, on the website for everybody to have access and have a copy.

Okay. Let me go to the legislative background of this rule and also what's coming up and where we are with it right now. The legislative authority started in 1992 and that was Energy Conservation and Production Act Section 305. And the rules EPAct 2005 and also Energy Independence and Security Act (EISA) of 2007 Are revisions of that rule and those are the ones specifically we're talking about ECPA and EISA, Energy Policy Act, called EPAct. Both of those acts mention about sustainability of federal buildings and we will talk about that more in detail.

As you see here, sustainability design which the draft rule was published on the 28th of May,is the subject of this public meeting today. It was first mentioned in EPAct 2005, Section 109, you all are probably familiar with and you've read it before. EPact mentioned Life cycle cost effectiveness requirement to design sustainable buildings. And also in EISA the same thing was basically mentioned but this time it was for

certain buildings and we talk about that during the next slides. Also addition of major renovation was added to the buildings and then in the rules we have defined what the major renovation means. And also in this rule again I should mention no mention of life cycle cost effectiveness.

Also two more items or areas are covered in this proposed rule today. One is the minimum requirement for green building certification systems and you all are familiar with that system such as USGBC, LEED or Green Globe, those are just two examples of this rating certification programs. Then I'll tell you in brief what is presented in the rule and then we would like to hear from you and in your comments.

Also 30 percent of the water heating for federal buildings should be provided via solar energy if possible. And also as I said at the bottom this is a modification to the ECPA, Energy Conservation and Production Act of 1992. And that is the citation, 42 U.S.C. 6834.

Current status, okay, you all probably remember having seen what we published in 2007 that was again mandated by Energy Policy Act 2005. That, Federal buildings should be at least 30 percent better than the building codes, national building codes. And

in that rule building codes we're referring, this is coming from the statute, for commercial buildings was the American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 90.1 2004. For residential buildings referred to IECC, International Energy Conservation Code, Standard 2004. Legislation refers to 2004, even though that was a supplement to 2003, original document. So those are the baseline for those two standards and it was published in December of 2007, something like that, and then it was effective by January 2007. Federal agencies for new buildings should follow those requirements.

Again, comment period for today's rule ends on August 12th. We are looking forward to seeing your written comments then we will review all the comments and then draft the final rule. We will basically reply to every commenter and the comments and what the decision by the Department was on that in the preamble of the final rule.

All the rulemakings will go through the concurrence process. In other words, internally and then finally in the Office of Management and Budget. They all have to concur prior to publication in the Federal Register.

Another notice that we are working on, and as

I speak it's with the Office of Management and Budget, is the reduction of fossil fuel. We are looking forward to have that rule to be concurred by that office and then to be able to publish that proposed rule. We have the same procedure as this one, public meeting, comment period and so forth.

Okay. Here is basically for building classification I put this slide here so what we have what are the buildings covered by the Energy Independence and Security Act of 2007 and the areas that relates to Federal buildings. Federal buildings definition is defined in the third or second page of the NOPR. It's a very long definition and I recommend that you read that definition of what the Federal building is.

Also the statute says Federal building or the buildings which are more than 2.5 million, cost more than 2.5 million. Those are the areas from EISA for federal buildings. And as you see, you know, a sustainable design requirement for the EISA type building apply life cycle effectiveness, but for the rest of the Federal buildings applies only if life cycle cost effective.

And also on the green building rating system as I mentioned the requirements applies to EISA type

buildings. And for the rest of the building do not. In other words agencies can select any kind of a green program that they would like to apply to their buildings, but not the EISA covered buildings.

EISA building covers major renovations. I read some of the statements. There are some comments on the definition of major renovation.

The major renovation does not apply to the rest of the Federal buildings.

Okay. Consistency with other federal policies. As you see here we mention guiding principles. The Guiding principle first came to the Executive Order signed by President Bush which was Executive Order 13423, if I'm remembering. I'm getting old so numbers are getting difficult for me to remember. And also in the new Executive Order signed by President Obama, 13514, they both referred to the guiding principle and that is the high performance and sustainable building guidance. And there was a memorandum of understanding, signed by most of Federal agencies basically to do what the guiding principle says. And because of that and also sustainability elements are very much covered, the same items, but again, our rule is more comprehensive and more expanded from the guiding principle. Certain things were not

there and then we have it in this rule. For example, siting certain coverage of the type of buildings which was not. We very closely worked with the working group that developed the guiding principle. And we worked and communicated with this working group to make sure that what we are writing is very much in line with the guiding principle. We didn't want to have more regulations for the stakeholders, you know, we see something in the Executive Order or something else in the Federal rule which would be going to the Code of Federal Regulations after we finish the final rule.

Let me mention that any time we do a rulemaking of any type of rules which is mandated by Congress we are going through the proposal rule, final rule, and when the final rule is published in the Federal Register, that rule is going to go to the Code of Federal Regulations. What we have in the Code of Federal Regulations for Federal buildings are in two sections. Section 433 for commercial Federal regulations. And all the residential Federal regulations goes to section 435, for your information. So it is very important that you look at those CFRs Part 433 for federal commercial and 435 for federal residential. Okay.

Proposed elements of sustainable design.

There are six elements that were covered excessively in the proposed rule that I would like to identify those one more time.

The first is integrated design. As you all know sustainable design for the buildings has so many elements. So it's very important, you know, to have the whole building design type principle and process to be applied for this type of design for the federal building sustainability. Also we employ commissioning practices. In other words, when the building is done the Federal agency or whoever is the owner, they need to make sure that it's going to follow up so that building is going to be performed as far as the elements are in case of sustainability and so also 30 percent better than the building codes. Eventually when we get the reduction of fossil fuel and by FY2030 per EISA 2007, all Federal buildings should be free of fossil fuel usage. And that is the rule that's coming up. I don't want to talk too much about that rule, even though it looks like I'm okay with the time. This fiscal year we have to reduce fossil fuel usage by 55 percent and you go every five years to reduce it a few percentage more and then we get to FY2030 that we have zero percentage of the fossil fuel usage for the Federal buildings.

And the baseline that you are probably very familiar with is the CBECS, that is Commercial Building Energy Consumption Survey, statistical data which is collected by another part of DOE, another office, EIA, Energy Information Administration, and the last or what the statute is referring to is a 2003 version of that. And the 2007 is supposed to come out, but I think EIA is not keeping up with the schedule. So we are looking forward for CBECS 2003 revision.

Again in the RECS, that's for the residential Federal buildings, those are the baselines for 2003 and then we are basically reducing it from that baseline by so many percentages.

Okay. Energy performance. As I mentioned, we already have the requirements we published in 2007 for Federal buildings, new federal buildings, should be 30 percent better than the building codes and if is life cycle cost effective.

Water conservation, this is very much coming from the guiding principles. Use 20 percent less water indoor, 50 percent less outdoors. You are probably familiar this requirements. EPA administers that program. Water assessed products and then we have indices what the conservation of water should be and how to reflect that in the rule. And so this is what

we basically have on that.

The more elements are indoor environmental quality, very, very sensitive area. The American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 62.1 which covers commercial buildings and 62.2 is for residential building. So these two documents developed by ASHRAE are covering the indoor air quality.

Another standard, ASHRAE Standard 55 and this is reflected in the RECs, the regulation part of our proposed rule, and it's covering the thermal comfort, also are related to the indoor air quality improvement of indoor air.

Okay. Environmental impact of material, recycle the vital based element in environmentally preferable products. That's something in a part of sustainability as you all know. And recycle or salvage 50 percent of construction waste.

Siting. Siting is something that is not in the guiding principle. It is covered here. Also covered in some of the newer ASHRAE or ICC documents in their presentation.

So, again, central location, close to public transit and all that if possible is part of the sustainability elements for siting.

Okay. Green Building Certification System, this is the other area which is covered in this notice of proposed rule. Okay. This rule does not require, as it says here, not underlined proposing to rate new/renovated buildings comply with a green building system. Okay. Also this proposes minimal system certification or specification, if Federal agencies choose to use green building system. Then we have very elaborate and extended explanation of what we have for the green building systems in the proposed rule.

Okay. If the agency decides to use the green building certification system, then within the system criteria is that verification by independent assessors and authorities or auditors. These are developed by a consensus based process to include a public comment phase and so forth and national recognition also includes periodic evaluation of the building, post occupancy, assessment and that sort.

Okay. In this notice of proposed rule, in the preamble part of the rule, depending on the areas, we are asking for comments from you, from all of you stakeholders to help us to go forward for drafting the final rule. And I'd like to identify one more time what we asked to comment. I went through the NOPR, David and I identified those comments, to make sure

that we are going to get comments from you related to areas we are asking for comments.

The major issues here that we are requesting input from you all is that cost increases versus improved sustainability. This is one area that I specifically would like to identify and get your comments on that. Should existing green building system be preapproved as meeting: Item 1-Acceptable system so that agencies can voluntarily use or Item 2-sustainable design requirements in the rule.

Okay. I've identified specific comment on the next two slides. 5 items on each slide, total of ten areas. These are all coming from the notice of proposed rulemaking that you have. And I just wanted to basically read those and emphasize the areas that are specifically mentioned and then ask for your comments. I read most of the statements that I received and you have mentioned some of the areas that I have listed here.

Okay. Let's go over these ten items. How to apply standard to leased buildings -- I'm just reading those and we will talk about it -- for level of control for federal agencies over construction of these buildings. That we would like to receive comments on.

Should there be a 3 percent or other limit on

total construction cost increases as a result of the rule. Should there be a threshold on life cycle cost increases as a result of the rule and if so, what threshold.

Let me mention at this point, you probably know that cost effectiveness for the federal building, what we are referring to here is in the Code of Federal Regulations Part 436 and that's the methodology of how the cost effectiveness should be evaluated. There are four methods and I'm not sure you are familiar with that, if you are not, please read that section of the Code of Federal Regulations 436.

We also have responsibility to revise, update that section. And the National Institute of Standards and Technology working very closely with us to update this section. Every year we update the discount rate and related areas. I see some heads going from up, down, so it means it looks like you know what I am referring to.

And going back to how should "major renovation" be defined? We proposed a definition for that because the statute says design sustainability also applies to the major renovation. So it is appropriate that we propose a definition for major renovation in this rule.

And how should the requirement of 30 percent hot water demand via solar energy should be implemented if life cycle cost effective.

Okay. The other five items that I identified in my slide are here which, again, as I said, they are explained in the NOPR and I am just going over those to make sure that we are getting comments from everybody on those.

Should ASHRAE indoor air quality guide or other industry indoor air quality, IAQ, guide or standard be referenced in the rule? I'd like to hear that comment.

How should radon control be addressed in the rule for residential building and also for commercial building? Radon was popular with residential buildings. Now we're talking also about the commercial building. We would like to hear your comments on that. We are covering commercial and residential in this rule.

And should the ozone depletion be addressed? I was reading the statements, it looks like there are some comments on that issue already in the statements from speakers.

Okay. Should actual energy use of building designed to this code be collected and reviewed? If

so, how should this data be used?

So these are the areas that I put on the slides so for you all to make sure that you comment on those.

And my last slide is that these are how your again, this is coming from the NOPR, but I am showing here again. Make sure that the title, the Docket number because all the comments are going to be entered into the Docket sheet for this rule. And all the comments, all the references, we have to have all that in one place in what we call it a Docket room. Then you all can come, if you are interested to read everything related to this rule.

So it is important that you refer to that number in your comments.

Also the RIN Number, Regulatory Identification Number. There are two ways that we identify or keep track of all the rulemaking that we do.

And, again, still I am the point of contact until the end of the comment period for this rule which is August 12th. And then later on as Richard Kidd mentioned, we are in the process of transferring some of the rule to the building technology and Margo Appel here is going to lead on that project. But for the

time being all the comments are going to come to me to my attention.

And those are the three ways that you can provide your comments to us. E-mail, your postal mail and your courier.

So all that is done. Again, comments deadline is midnight August 12th. And my goodness, I have until 10:30 -- (sound file interruption).

(Laughter.)

MR. NASSERI: And, again, as I said, you know, we would like to hear. Again, this is a gathering to hear your comments. We may be able to answer some of the questions, general counsel is here and technical issues, if there are issues that we can answer or basically the PNNL experts are here, myself, we will do that. But we are expecting that you tell us, comment about our proposed rule and then all your comments is going to go to the Docket -- everything today is going to be in this public meeting transcripts and that is going to be available soon.

Question?

MR. RABA: Yes, state your name, please?

MR. APPLE: My name is Todd Apple with Dupont. It was a procedural question with regard to the public comments and when would we be in a position

to read others' public comments? Would that be before August 12th?

MR. NASSERI: After.

MR. APPLE: We would not be able to see other public comments until after August 12th?

MR. NASSERI: After the close of the comment period we have all the comments basically and the docket. And what we do we are going to just say, you know, the commenter, the nature of the comment, organization, and so forth, then later on we are going to use that on how to proceed for the final rule.

Any other comments, any other questions?

MR. RABA: Yes, please.

MR. BLAKEY: Allen Blakey, the Vinyl Institute. I guess the answer to this is probably obvious, but in e-mailing comments, the subject line of an e-mail would only allow a few words. I guess you could use any of those three bullets you've got up there under the subject line of all correspondence in order to send in an e-mail?

MR. NASSERI: Uh-huh.

MR. BLAKEY: You don't have to put the whole thing on your subject line?

MR. NASSERI: Chris?

MR. CALAMITA: Chris Calamita, DOE. I think

if you had to limit to one, we would prefer maybe the RIN number.

MR. BLAKEY: The RIN Number.

MR. CALAMITA: That's the most precise. Yeah, I do appreciate that subject lines can have a limitation on them. So, yeah, the RIN Number would be preferred.

MR. BLAKEY: Thanks.

MR. NASSERI: Thank you very much, Chris. I almost went to law school, you know, in engineering. I didn't do that. So I'm not very comfortable when it comes this. So I have a great team of Chris Calamita and also (inaudible).

Any other questions?

(No response.)

MR. NASSERI: Great. Thanks a lot.

MR. RABA: Thank you, Cyrus.

(Pause.)

Stakeholder’s Statements

MR. RABA: We are trying to plan the next part of the day here. We are looking at the statements here and then person who wish to speak. I think that you might have some flow that would go very smoothly with this order that you've developed.

MR. NASSERI: What we did, I sent an e-mail

to the speakers, the ones that probably received it and then because of the nature and the number of speakers we were asked, you know, to basically have a three minute time to present your comments and then summarize your statements as much as you can and then that's what we'd like to go forward. So far we have received something like 14, 15 statements to be presented. I don't know how many other just came here with their statements. So that's what we would like to do to basically finish on time and give an opportunity to every person or organization to give us their comments.

Then I kind of made an arrangement -- the arrangement comes when I receive, you know, mostly first to speak so we kind of put number one, two, three. So if you notice in the agenda, we do not name anyone. We don't list the organization and all that. So we have it here. Jim is going to follow up that order to do this.

MR. RABA: And you may want to take some more time with your comments, but just basically a summary and certainly the written comments are most welcome afterward. And I think Cyrus would have maybe on order here.

Is the representative from the American Society of Heating, Refrigerating, and Air-Conditioning

Engineers here? Good to see you, sir. Would you like to use the podium?

MR. MONTGOMERY: No, I'm okay.

MR. RABA: Thank you.

MR. MONTGOMERY: Thank you and welcome, everybody. My name is Ross Montgomery from ASHRAE. I'm a vice president there. I've come here today to talk to you about ASHRAE Standard 189.1

I want to make some brief statements about ASHRAE, obviously we were founded in 1894. We've been in business for many, many -- over 100 years and we are an international, non-profit, technical engineering society of over 52,000 members in over 140 countries. Our members represent the breadth of professionals involved in the built environment from consulting engineers, architects, contractors, to mechanical equipment representatives and a lot of academia.

We have a mission of advancing the arts and sciences of HVAC and are to serve humanity and promote a sustainable world and we do that through research, standards, writing, publishing, and continuing education. And we like to think of ourselves as the experts on energy and buildings and also indoor air quality.

We have a very rigorous standards development

process that we call -- we use what we call consensus, openness, balance, transparency, and in fact we are one of the ANSI audited designators here so that we can act --

(Sound going in and out.)

MR. MONTGOMERY: -- self perform -- designations.

So in addressing today's NOPR ASHRAE strongly believes that our newly developed ASHRAE Standard 189.1 will help meet many of the federal government's needs and guidelines on energy management, indoor air quality, et cetera.

As Cyrus went through his slides, we feel like 189.1 will meet and exceed many of those.

In recognition of the importance and broad-base of support for improved green building standards I am testifying here today with my colleague from the ICC who we worked with a lot on this ASHRAE standard 189. We developed this in collaboration with the Illuminating Engineering Society of North America, IESNA, and also USGBC in addition to the APMO and other organizations that we work with a lot.

We feel like ASHRAE Standard 189.1 is the first code intended, commercial green building standard in the United States. And we also want to service the

compliance path of the International Green Construction Code, IGCC, that's published by the ICC.

We have brought to you like seven pages of long comments and I'm just summarizing some of these here today. ASHRAE Standard 189.1 represents a revolutionary new step for building standards as it provides a long-needed green building foundation for those who strive to design, build, and operate green buildings. From site location to energy use to recycling this standard will set the foundation for green buildings through adoption into local codes.

It covers key topic areas very similar to green building rating systems which include site sustainability, water use efficiency, energy efficiency, indoor environmental quality, and the building's impact on the atmosphere, materials and resources.

The energy efficiency goal of ASHRAE Standard 189 far exceeds that of ASHRAE Standard 90.1 2007, so it actually adds more energy efficiency ratings for that. And it basically provides minimum requirements for the siting, design and construction of high performance green buildings. For these reasons and about three pages more of those reasons that we cited in our statement we would like very much for the

Federal Energy Management Program to reference ASHRAE Standard 189.1 compliance option of the IGCC as a means of meeting the requirements of this rulemaking in Part 433 as indicated as I move on through my testimony.

We have many, many, many pages of ideas in there which when I saw Cyrus go through his slides, they're right on point of a lot of the information Cyrus was hitting. I do want to touch on one particular thing that ASHRAE Standard 189 is intended to compliment green building rating systems. It's not intended to be a rating system nor do we want to compete with rating systems. We just want to compliment them and provide the technical information base for those to do well no matter which one you might pick.

Also ASHRAE has a building energy quotient, energy labeling program, that we think that may meet DOE's green building certification needs inasmuch as energy. The building EQ program that we currently have going on involves creating an asset rating, or an "as-designed rating" next to an operational rating which is the actual measured value of the energy the building is using. So it not only does the asset which is the design side, but it also does the operational side after the building has been in operation for 12 to 18

months so you can compare the design to the actual operation and see how it's performing. So we think that's an important part of what DOE is interested for energy and we would just like to just show you that we have a pilot program that's doing well. It's soon to finish. We have a nice, bright, good-looking building label for DOE to consider.

So, in closing, ASHRAE Standard 189 represents a major step forward as the first code-intended commercial, high performance green building standard in the United States. And we believe that ASHRAE 189.1 is poised to revolutionize the design, construction, and operation of green buildings. Many of the standards provisions are directly in line with DOE intent and the notice of today's rulemaking. They go hand-in-hand and it answers a whole lot of questions in that notice for proposed rulemaking.

We strongly encourage DOE to incorporate and reference, once again, the Standard 189.1 compliance option of the IGCC as well as other ASHRAE standards that I mentioned in my report including 90.1, 55, 62, 100, 180, Guideline 0 for commissioning, and also the new indoor air quality guide that Cyrus mentioned in his slides.

So working together in a continued

partnership I am confident that we can succeed in meeting the nation's most pressing and environmental sustainability needs by improving the built environment. These are all an important part of ASHRAE's mission and vision as we go through our things that we want to work with DOE every step of the way. So I thank you very much for letting me speak to you here today and I'll be glad to answer any questions, or we can wait until the question answer period.

MR. NASSERI: Thank you. We can -- we are a little bit ahead of that. My presentation was half an hour short, so we have a little bit of time. Any comments for Ross related -- I have my question comes first. Is ASHRAE 189.1 for commercial buildings?

MR. MONTGOMERY: Yes.

MR. NASSERI: Is ASHRAE working on anything for the residential like 189.2?

MR. MONTGOMERY: Well, they have a 189.2, it's actually going towards hospitals, but we also will consider the residential side as time goes on.

MR. NASSERI: So ASHRAE is working towards the residential part of this?

MR. MONTGOMERY: Yes, we are talking about it. We don't have an actual TPS yet, you know, title, purpose, scope yet, but we are actually moving in that

direction. It's our natural progression.

MR. NASSERI: Any other comments for Ross?

(No response.)

MR. NASSERI: Good

MR. RABA: Well, thank you very much.

Would the representative from the International Code Council like to speak?

MR. WYLAND: Sure. Thank you.

MR. RABA: Thank you.

MR. WYLAND: Excuse me. My name is Rick Weiland, I'm the chief executive officer for the International Code Council. I want to thank you for this opportunity to share a few words with you today. We are pleased to be able to provide some new information regarding the regulation of green construction involving tools backed by six preeminent national organizations that are now available to address federal goals as well as meet the needs of state and local governments.

To begin with, I just want to give you a little bit of background, for those of you who don't know anything about the International Code Council itself. We were established back in 1994 as a non-profit organization dedicated to developing a single set of comprehensive and coordinated national model

construction codes. We are a membership organization dedicated to building safety, fire prevention, and energy conservation. And our international codes provide a state-of-the-art basis of safeguards for people at home, at school, and in the workplace.

Our model building codes benefit public safety and support the industry's need for one set of codes without regional limitations and are adopted in all 50 states including the District of Columbia.

We published the International Energy Conservation Code, the IECC, which is referenced as Cyrus mentioned in the Energy Independence and Security Act of 2007 and is a national requirement in Section 410 of the American Recovery and Reinvestment Act of 2009. The IECC in particular is used or adopted in 45 states, the District of Columbia and the U.S. Virgin Islands.

Concerning the proposed rulemaking at hand, the ICC would like to offer just a few following comments and obviously we've submitted our written comments which are a lot more extensive than the two to three minutes I was allowed to talk regarding this.

Some of the terminology used in the legislation and in the proposed regulation does not reflect the most optimal blend of tools now in

existence to achieve Congressional intent. Instead, reflecting only options available at the time of drafting. In the absence of a model code to create a regulatory framework for green construction rating systems helped bring the discussion of green design into focus, setting the stage for a baseline set of codes while LEED and other systems function as an additional set of criteria beyond this codified baseline.

The gap between existing codes and rating systems has now been filled with the IGCC. The publication of the International Green Construction Code which includes ANSI's -- ASHRAE Standard 189.1 as an optional compliance path, there is now a new and comprehensive set of tools available in mandatory code language. The IGCC jointly sponsored by the American Institute of Architects, AIA, ASTM International, ASHRAE, the U.S. Green Building Council, and the Eliminating Engineering Society contains provisions that are well adapted to the federal government's need for an enforceable, verifiable, and adaptable document to facilitate the green and sustainable design, construction, and renovation of federal buildings.

In addition, the IGCC references the National Association of Home Builders (NAHB’s) and ICC's ANSI

National Green Building Standard for residential construction, the ICC 700 standard.

We are gratified that our colleagues at ASHRAE in collaboration with ICC have testified today and have joined us in this effort. In addition, the sponsorship of USGBC underscores the role of the IGCC as a baseline code and lead as an optional rating system as two bookends to creating a greener built environment.

Our colleagues at USGBC, the organization that originated the LEED standard, have publicly called for the adoption of the IGCC as well.

To recast the proposed rule in this new context we attempt to indicate throughout our written comments the places where the language of the proposed rule is either too restrictive or uses inappropriate or outdated definitions or terminology that could disqualify buildings otherwise meeting state-of-the-art requirements in this rapidly evolving area of green construction. We strongly encourage FEMP to reference the entire 2012 IGCC, including the ANSI ASHRAE 189 Standard as a compliance path option, and including the ICC and HB-700 National Green Building Standard for residential structures as a means of meeting the requirements of this rulemaking in parts 433 and 435 as

reflected throughout these comments.

I want to thank you again for the opportunity to make this presentation along with our colleagues at ASHRAE and the other four organizations that have been a part of this developmental process of the IGCC. We encourage the Department of Energy to continue to support these ongoing sustainability efforts. Thank you.

MR. RABA: Thank you.

MR. NASSERI: Thank you very much, Richard. Any comments? One or two comments for Richard concerning the IGCC and ICC documents?

(No response.)

MR. NASSERI: So we can proceed.

MR. RABA: Sunnovations.

MR. CARLSON: So I guess I'm first up from industry here.

My name is Matt Carlson, Chief Executive Officer of Sunnovations, Inc. in McLean, Virginia. I am pleased to have this opportunity to participate in this public hearing on this important issue.

In my and Sunnovations' view the proposed rule: one, represents a meaningful advancement in the cost and energy efficient construction practices of the federal government; two, recognizes the role that solar

water heating can play in reducing our nation's environmental footprint and increasing its energy independence; and three, will spur economic activity among the small and entrepreneurial business community that forms the core of the green building and solar hot water technology ecosystem.

Let me give you a brief summary about my company and why we're interested in this topic. To excerpt from Sunnovations' mission statement, "Solar powered hot water should be an obvious affordable alternative for all American homes and businesses and federal, state and local policy and regulation should encourage its use." While Sunnovations would be a potential beneficiary of the proposed rule, it clearly speaks to the heart of our company's mission.

Sunnovations was founded in 2008 by my colleague and company chief technology officer Arno Van Hauten. An engineer by training Arno sought to develop a solar hot water system that had all the attributes that were lacking in comparable solar hot water technologies in the United States market, affordability, simplicity, and standardization. Our system is particularly suited for smaller scale applications including single and multi-family residential, small office and commercial, as well as

remote or periodic use to locations where our system's no maintenance operation is especially valuable.

I want to specifically and particularly commend the Department on its recommendation to include military housing in the definition of federal buildings. This is an important development as the tens of thousands of units in our military housing stock represent a phenomenal opportunity to showcase solar hot water technology and mitigate energy costs at military facilities. Projects like FLS Energy's recent installation of solar hot water heating systems in 900 homes at Camp LeJeune, North Carolina speak to the viability of such projects and represent a win/win for all parties involved.

The Department has also asked for comments on the definition of "major renovation." Sunnovations' observation there would be to encourage a definition that included multi-unit projects that are part of a single contract as opposed to setting a $2.5 million per building threshold.

I am also here as a representative of the nation's small business and entrepreneurial community which has a substantial stake in this rulemaking. Sunnovations is part of a new breed of entrepreneur that is pursuing both societal benefit and economic

opportunity. The overwhelming majority of U.S. domiciled companies that are involved in the solar thermal sector from vendors to installers to service providers generate less than $20 million in annual revenue. Indeed, most of the estimated 600 firms nationally that are active in solar hot water installation are owner-operated firms with revenues between $1 and 5 million.

That is the quick summary of my testimony. So thank you for your attention and your advocacy here.

MR. RABA: Well, thank you. Thank you very much.

MR. NASSERI: Great. Great. Any questions for Matt?

(No response.)

MR. RABA: Great.

MR. RABA: We will now hear from the Green Building Initiative.

MS. SHAFFER: Thank you. It's good to be here this morning. My name is Erin Shaffer and I am here representing the Green Building Initiative (GBI), a 501(c)(3) non-profit organization based in Portland, Oregon.

GBI became the first green building organization to be accredited as a standards developing

organization through the American National Standards Institute. GBI also embarked on a process to establish Green Globes as the first ANSI standard for commercial building, an effort completed successfully in March of this year.

My comments today will focus on three key areas within the proposed rule. First, green building certification systems. GBI's Green Globes meets the requirements of the guiding principles and DOE's proposed rulemaking. GBI owns the rights to Green Globes in the United States and promotes Green Globes for new construction and Green Globes for continual improvement of existing buildings. Both systems are overseen by GBI and enable assessors and auditors to independently verify the criteria and measurement metrics of the system, are developed by a certification organization that provide an opportunity for public comment on the system and provide an opportunity for development and revision of the system through a consensus-based process and are nationally recognized within the building industry.

Green Globes is subject to periodic evaluation and assessment of the environmental and energy benefits that result under this rating system and includes a verification system for post-occupancy

assessment of the rating buildings to periodically demonstrate continued environmental and energy benefits.

GBI achieved recognition for being the only green building rating system for commercial buildings to take its new construction module through the ANSI process and have now the ANSI GBI 01/2010 a green building assessment protocol for commercial buildings as the first voluntary compliance standard that is directly relevant to DOE's request for comments on new voluntary consensus standards. The Green Globe system is a web-based green building tool that's used by more than 21 VA hospitals, a number of State Department buildings, including the first green globe certified building in Washington, D.C., at least 14 GSA buildings in two regions, by the Health and Human Services on a handful of buildings. It's also incorporated in 20 state laws, has been recognized by a number of major insurance companies for preferential green building rates, and is used by major universities and corporations around the country.

The Green Globes tool for new construction and continual improvement of existing buildings have assisted federal agencies in working toward meeting the federal requirements outlined in the guiding

principles. The two tools work together to provide a continuum to assist design teams in setting of achievable performance goals and operations teams in continuously monitoring performance and making incremental improvements.

The Green Globes system recognizes progress in reducing energy consumption through use of the Energy Star Rating System that's incorporated into the tool and ASHRAE 90.1 benchmarks.

On water performance we note that the ANSI GBI standard contains a very advanced water section with stringent criteria allowing agencies to meet existing and new criteria as outlined in the proposed rule including specialty areas of water consumption.

GBI asked that DOE officially recognize green globes as a certification system that meets all of the criteria called for in the proposed rulemaking.

My second point regards focuses on levels of green building certification. Achieving two Green Globes allows agencies to meet federal requirements. The four levels of Green Globes are comparable to the four levels of LEED. GSA has designated LEED silver as meeting federal requirements. Federal agencies using Green Globes protocol should achieve two green globes for compliance with the federal agency mandates.

Currently there are at least nine buildings around the country that are dual certified leading Green Globes and at least two of these are federal buildings. The resulting certification levels demonstrate the point that the systems and their four levels of certification are equivalent.

Finally, voluntary sustainable design standards, has already noted that the newest Green Globes tool, the ANSI GBI standard, was finalized and approved by ANSI in March of this year. It meets the requirements of the proposed rulemaking and it liked the current versions of Green Globes on which it was based and that are being used by federal agencies today to comply with the guiding principles and other federal requirements.

Green Globes provides important advantages to agencies and we request that DOE formally recognize GBI as Green Globes and its newest version the ANSI GBI standard noting that these represent voluntary tools and standards for agencies to use to comply with federal agency requirements.

One additional comment I want to make is with regard to DOE's statement that it's considering removal of green building certification systems if, for example, the actual building energy use exceed the

target energy use identified under the certification system. And GBI recommends that instead of removing a certification based on design standards that the federal agency should prioritize and emphasize the post-occupancy certification. Green Globes' continual improvement of existing building certification and recognizes actual building performance outcomes.

Thank you very much. I'd be happy to answer any questions.

MR. NASSERI: Thank you. Thank you very much. Any questions for Ms. Shaffer concerning green building initiatives?

Yes, one question.

MR. THOMPSON: This is Mike Thompson with Ingersoll Rand. It's my understanding that GBI is already listed as acceptable under the current standard? Do I recall reading that? And how are you looking to change what's currently in the standard or are you just supporting?

MS. SHAFFER: Yes. If you're talking about the proposed rulemaking GBI is not -- Green Globes is not listed either as one of the standards that has been under development in the standards section. The rule right now, I'm sure there are others that can talk about it in more detail, but talks about the criteria

that must be met by a certification system and level to then be recognized by DOE. And you would probably be best to explain it, but it sounds like DOE will then provide a list or develop a list of certification systems that will be approved and could be utilized by federal agencies. We are recognized in different agency's internal guidance as a tool that can be used by their agency.

MR. THOMPSON: Okay. As a general comment as far as a manufacturer of air conditioning equipment is concerned, you know, we believe that the widest range of acceptance on green building standards should be allowed. We are very supportive of the USGBC as well as GBI and 189.1. They all have their own merits and more options from the government agencies and which standard they have to do I think is better for the industry and gives better flexibility towards meeting green building standards. So I would fully support all those standards from ASHRAE's to GBI's to USGBC's.

MR. CALAMITA: This is Chris Calamita with DOE. Just, again, to clarify, we did not propose a single rating system or multiple systems. But as Cyrus had commented one of the things we are requesting comment on is should the DOE then apply whatever criteria get finalized in the final rule and identify

systems that meet that criteria or leave it up to the agencies then to identify various systems. And there may be benefits or issues with either of those approaches and we would like to hear comment on that.

MR. NASSERI: As Chris mentioned, this is an area we would like to receive your comments and we ask specifically for comments where it says, this is what was proposed in this proposal. We are not identifying any program or any levels at this point.

Okay. Any other comments for --

(No response.)

MR. NASSERI: Good. We are doing very well as far as time is concerned.

Jim.

MR. RABA: Rolling right along, in fact you're up again, sir.

MR. THOMPSON: Okay. Again, my name is Mike Thompson. I work for Ingersolll Rand and we are a global large manufacturer of air conditioning and refrigeration equipment and we produce equipment under the brand names of TRANE, ThermalKing and Huspin. And specifically what I want to address in this meeting is the discussion and the references to ozone depleting substances. My understanding and from reading the original Executive Orders, there's very little to no

mention of ozone depleting substances in those documents. However, it does trickle in to the DOE document that we're talking about on ozone depleting substances. And although it doesn't prohibit the use of ozone depleting substances, there are several references I've documented in my submissions. But primarily it says things like -- let's see, the use of ozone depleting compounds during and after construction must be eliminated where alternative environmentally preferable products are available, which we fully support. However, environmentally preferable is really not at all defined.

And when we look at air conditioning products and refrigerants there are three primary ways in which air conditioning will impact the environment. One is through the ozone depleting substances and the potential of the products, also the global warming potential of those products and also the energy efficiency

(break in sound system)

MR. THOMPSON: -- three of those aspects together. So if I try to -- if I pick on ozone depletion saying I need to eliminate that, I could be giving up on the global warming and energy efficiency side of things.

In my point of view the U.S. Clean Air Act as followed by the guidelines of the Montreal Protocol already handle the reduction of ozone depleting substances and as such through the U.S. EPA and the U.S. Clean Air Act they have already eliminated the bad acting ozone depleting substances already found. And the ones that are left to use are really very, very minimally environmentally impactive regarding ozone depletion and have some other benefits regarding global warming. A specific example of that is the use of the refrigerant HCFCR123 for centrifugal chiller applications. This has a very, very minimal impact on the ozone layer. It does have some and it's allowed to be used until the year -- or able to be produced until the year 2030. But it also has the lowest global warming potential impact of any refrigerants today on HFCs and it also is the most efficient option today in large chiller plants by as much as 10 to 12 percent over the HFC alternatives.

So we need to strike this balance between how we treat ozone depletion and greenhouse gases, they're all important.

The proposed solution in this document, I think is very, very simple and that is the U.S. EPA through the U.S. Clean Air Act has the guidance to

eliminate ozone depleting substances. They've done their job and they're doing that well and we have agreed-upon dates that we are meeting in the industry and we're all happy to do that. And I don't think it would be in conflict with the Executive Order just to completely remove the language regarding ozone depleting substances and stick to greenhouse gases. And that way you would avoid any conflict between the two standards. The ozone depleting substances are already handled through U.S. law that has been passed by Congress and we can know them and rely on them and there won't be any conflict between having our customers decide what an environmentally superior alternative and having them come up with their own criteria on what is considered environmentally superior because that just gets us in a very, very difficult and complicated discussion that we don't need to go. So we very much encourage the use of lower greenhouse gas impacts on energy efficiency and low greenhouse gas compounds and these refrigerants. So we support that. We support all the energy efficiency reductions put in here. I think that's a great direction to go, you know, improvements over 90.1, the standard. But I think getting into the foray of making decision on ozone depleting compounds is really walking into a

conflict between the U.S. Clean Air Act and what's being allowed to be used by the EPA and how good or bad those chemicals are.

So to sum up, my guideline here is to say really we ought to eliminate any references here to "ozone depleting compounds" because I think we are looking at potentially stepping on the toes and conflicting with the guidelines by the U.S. Clean Air Act and U.S. EPA.

Thank you.

MR. RABA: Thank you.

MR. NASSERI: Great. Any comment for Mike?

(No response.)

MR. RABA: This might be a good time to take a break. I see nodding of heads, yes, in the affirmative. We made great progress in the morning. I think you earned a break. Let's come back, let's say, by that clock on the ten. Fifteen minutes.

(Whereupon, at 10:35 a.m., a brief recess was taken.)

MR. RABA: Through the course of the morning we've had some people arrive and if you have not already stated your name and affiliation, corporation, or company, or association you represent, please do so now. We have vertical mikes -- sitting mikes at either

side of the room back here or at the table as well too.

So, again, if you have not already introduced yourself to the group, please do so now. State your name and the organization that you represent.

MR. PARKER: Hi, I'm Graham Parker, Pacific Northwest National Lab.

MR. HANSON: Dane Hanson with the International Association of Plumbing and Mechanical Officials.

MS. ROGERS: Melissa Gallagher-Rogers at U.S. Green Building Council.

MR. ROSSOLO: I am Mark Rossolo with the Greenguard Environmental Institute.

MR. RABA: Great. Thank you. Welcome back.

Let's keep going with our speakers. The next one is the representative from the North American Coalition on Green Building. Please.

MR. HALL: Great. Thank you very much and good morning. My name is Bill Hall and I represent the North American Coalition of Green Buildings which consists of about 30 organizations with a material interest in the green building movement including the resilient floor covering institute. Our members manufacture sustainable and energy efficient products that will assist the federal government in meeting its

goals.

I'm going to summarize a more extensive coalition written statement we submitted on July 21st and speak about two aspects of the DOE proposal.

First, we strongly support DOE's proposal to establish minimum criteria allowing a federal agency to choose any building certification system that meets their criteria. We agree with DOE's legal assessment that EISA does not require DOE to identify a specific commercially available green building rating system. Instead, as recognized by the 2009 GAO report it is essential provide federal agencies with the flexibility to choose any qualifying green building rating system in order to meet its obligations because one size does not fit all in this area.

For example, as Erin Shaffer pointed out, Green Globes places great emphasis on energy efficiency credits and the use of lifecycle assessment which conform with the principles required in the DOE's sustainable design standards. Likewise, the appropriate green building rating system for a federal health care facility may be different than for federal office buildings. Thus, in this area federal agencies need to have freedom of choice.

The federal government also must avoid

creating a monopoly for one commercially available rating system and encourage competition. By doing so DOE will reduce the costs of the federal green building program and encourage innovation changes to improve the effectiveness of the certification system.

And importantly the National Technology Transfer and Advancement Act requires federal agencies to use ANSI accredited rating systems like the NAHB, residential building system and Green Globes which utilized the rigorous and consensus ANSI process to develop them.

In the final rule in response to the question posed by DOE, we believe that DOE should recognize NAHB, Green Globes and whatever other rating systems they believe that meet the minimum criteria established in the rule. The criteria which, by the way, we support. For the reasons explained by Erin Shaffer of GBI, we believe that Green Globes and also NIHB meet that criteria. But by DOE making the determination in this final rule as to which rating systems meet the minimum criteria and not leaving it to each individual agency DOE will help streamline and accelerate the use of these rating systems by eliminating the need for each agency to make its own independent determination which could lead to inconsistent results. And

ultimately, again, I think it would further the environmental objectives here of streamlining and accelerating the use of rating systems by individual agencies.

In response to DOE's question about requiring the use of two additional criteria which is rating systems that undertake periodic evaluation of energy and environmental benefits as well as include post-occupancy verification that the rated buildings are actually meeting the environmental benefits in energy savings, we agree that those criteria should be included. It's very important to check and determine on a continuing basis whether the rating systems are living up to what they're advertised to be as well as the buildings themselves. However, we do have an issue with the suggestion that a green building certification system or certification for a building would be removed after one year if the building's energy use exceeds the targeted energy use. We feel that that time period is too short. Often it takes two years or more for optimal building performance and it would be better for DOE to actually use and allow the implementation of building system improvements as a result of the post-occupancy verification process. And then provide an adequate time for those improvements to work rather

than eliminating the building certification on the first sign of an issue.

The second part of the proposal I want to speak to is the proposed mandate for federal agencies to use environmentally preferred products, that is, product that have a lesser or reduced effect on human health and the environment over the lifecycle when compared with competing products. This is a laudable goal, but we question whether DOE should include a separate EPP selection requirement in this regulation which would be independent of, and in addition, it appears, to the use of qualifying building certification systems by agencies that choose to do so.

Our concern is that -- well, first of all qualifying green building rating system include credits for using EPP products that, for example, meet indoor air recyclability, biobased energy efficiency and other criteria. Thus, in our view, an independent EPP mandate that goes beyond the particular requirements in a certification system is not needed because again the certification systems already include EPP requirements that have gone through an extensive public comment and participation process. But, if DOE does decide to include a separate EPP requirement, it's absolutely essential that the selection process utilized,

lifecycle assessments that evaluate all relevant product attributes and do not disqualify a product based on a single attribute when not justified by the lifecycle assessment.

As you know this overall product evaluation process is complex. It requires the use of recognized and time-tested LCAs such as the B LCA that was developed by NIST and the Athena LCA. And, in fact, we propose that DOE consider establishing eligibility criteria for LCAs that would be used for any EPP selection process just like you've established the minimum criteria for the use of a qualifying green building and certification system.

Also the EPP or any EPP selection process should use standards that have been developed for evaluating the sustainability attributes of products and their manufacturers within a particular product category. A good example of this is the ANSI accredited NSF-332 which is that sustainability standard for resilient floor coverings.

Overall any EPP selection process or requirement needs to be scientifically sound, feasible, and maybe most importantly, well understood because of the price, performance, and availability impact of EPP selection on that vast federal government procurement

process.

The Coalition and RFCI intends to submit more detailed written comments by August 12th. Thank you for the opportunity to present this statement and I'm happy to answer any questions.

MR. NASSERI: Any questions for Bill?

MR. RABA: Thank you. May we hear from the Vinyl Institute?

MR. BLAKEY: Good morning. Thank you.

I'm Allen Blakey, Vice President of industry and government affairs for the Vinyl Institute which represents U.S. manufacturers of vinyl resin or vinyl plastic, the raw material for myriad, durable, and energy efficient building products such as window frames, roofing membranes, siding, flooring, and others.

I appreciate the opportunity to present this statement. We strongly support initiatives to reduce building impacts through efficient and sustainable design, construction and most important operations. We believe the Department of Energy is on the right track with these proposals.

We commend DOE in particular for proposing to harness the marketplace to drive sustainability in federal buildings. DOE rightly recognizes diverse

approaches to green building certification systems.

As has been noted, LEED, probably the best known -- is probably the best known commercial U.S. green building rating system. But Green Globes recently became the first to win ANSI accreditation for its assessment protocol for commercial buildings.

Encouraging diversity in standards and certification systems will provide flexibility for different agencies, priorities and needs and will speed the development of standards particular to different types of buildings.

Fostering competition among rating organizations will also stimulate development of more performance-based criteria and technologies. As the Department notes in the proposal not all green building ideas and practices are easily measurable or quantifiable. And we would add, not all necessarily result in improved performance.

When criteria and rating system and eco-labels are prescriptive, selective, narrowly focused, for example, single attribute or otherwise based on limited or biased evaluations they tend to serve narrow product interests rather than broader sustainability goals. Criteria that are based as much as possible on complete and balanced comparisons of impact among

competing products and materials and formed by a life cycle inventory data will produce the most measurable results and the most improved building performance.

The Vinyl Institute supports transparent inclusive standards that take into account the full lifecycle of the building. DOE will help by encouraging development and adoption of rating systems and programs that measurably improve whole building, full lifetime performance.

Thank you very much for this opportunity. And we're happy to provide answers to questions or more information.

MR. RABA: Thank you.

MR. NASSERI: Thank you, Allen. Any questions?

(No response.)

MR. RABA: Following Flexible Vinyl Alliance.

MR. OTT: Thank you. Well, my comments will be brief, but certainly they're dovetail with my colleague's Allen Blakey from the Vinyl Institute and Bill Hall for the Coalition and Erin Shaffer from the Green Building Initiative.

I will start by saying, my name is Kevin Ott. I am the coordinator of the coalition of industry interests known as the Flexible Vinyl Alliance or the

FVA.

The FVA was formed in 2009 as an independent, informal coalition of more than 85 business concerns including trade organizations, raw material suppliers, compounders, formulators, molders and fabricators representing the full flexible vinyl value chain.

In terms of where you might find flexible vinyl in a commercial or residential building, you find it on the roof, in the power conduits and cable coverings which speak to fire safety and performance. You'll find it under your feet in carpets and carpet backing. And basically flexible vinyl is in the furnishings. Your arm rests are made of flexible vinyl this morning. If you keep your elbows on your chair you're touching flexible vinyl products. So in summary the flexible vinyl is both ubiquitous and frankly a bit invisible, but it is everywhere in the commercial and residential building.

I'd like to comment today regarding the NOPR and the proposed approach for establishing sustainable design criteria. And, again, reiterating what my colleagues have said, the flexibility to choose from certification systems which meet the proposed DOE criteria is the key to fulfilling important sustainability and governmental objectives. Green

Globes has traditionally placed great emphasis on energy efficiency credits and the use of lifecycle assessments or LCA which conforms to the DOE's sustainable design principles. Alternatively the U.S. Green Building Council or USGBC has a program underway to incorporate LCA in LEED and has recently increased its emphasis on energy efficiency credits and greenhouse gas reductions, laudable goals.

GAO stated in its October 2009 report that, quote, "that agencies who wanted the flexibility to choose the green building rating system that best suits their needs" end of quote, thus giving federal agencies that flexibility to choose based on the needs of the project, the agency's priorities, the specifics of the qualifying certification system and other factors is essential. Both Green Globes and LEED have merit and both should be considered under the NOPR.

Second, on the matter of EPP or environmentally preferred products, DOE proposes to mandate that federal agencies use, quote, "products that have a lesser or reduced effect on human health and the environment over their lifecycle when compared with competing products that serve the same purpose" end of quote.

As DOE suggests, preferred products should be

selected in the context of legitimate lifecycle analysis. Building products and the materials from which they are fabricated are unique. Each brings opportunities, efficiencies and cost considerations among other features and benefits. LCA can help identify the most sustainable solution at the most effective cost both to the taxpayer who is ultimately the funder of federal building renovations and to the environment.

There ware well-known consensus standards for lifecycle assessment and these LCA tools should be used in the process of identifying preferred products.

The FVA thanks you for this opportunity and we will be submitting more detailed comments by August 12th.

MR. RABA: Thank you.

MR. NASSERI: Thank you, Kevin. Questions for Kevin?

(No response.)

MR. RABA: May we hear from the Sustainable Forestry Initiative.

MS. BLOCK: Good morning. My name is Nadine Block and I'm the senior director of Government Outreach at the Sustainable Forestry Initiative, SFI.

SFI is an independent 501(c)(3) non-profit

organization and we are solely responsible for maintaining, overseeing, and improving the internationally recognized SFI program, a forest management certification program. We work with conservation groups, government agencies, communities, and the whole forest product supply chain to support responsible forest management and promote the use of wood products from sustainably managed forests.

We strongly support green building practices and government efforts to promote the use of energy efficient construction and appreciate the opportunity to comment on DOE's proposed rule.

So I would like to share some thoughts on the proposed rule specifically on the sections pertaining to green building certification systems.

I want to also mention that the SFI standard is recognized by multiple green building rating system and standards from around the globe including green globes, the NCGBI, Green Building Assessment Protocol for commercial buildings, Built Green Canada, the National Association of Home Builders, and the International Code Council's National Green Building Standard, Breen, CASBI, the ASHRAE 189.1 standard for the design of high performance green buildings, and the ICC international green construction code currently

under development.

In regards to the rule I want to state that we strongly support the approach taken by DOE in the proposed rule to identify minimum criteria for any green building rating system that a federal agency would choose to green rate a building. Choosing a single green building rating system is disadvantageous both to the federal government and the marketplace. It is not the government's role to choose winners and losers or to create a monopoly system. But rather to ensure the credibility of any system chosen by a federal agency to green rate a building. We feel that the statutory criteria proposed are appropriate to ensure that credibility.

Furthermore, the green building ratings field is a rapidly changing field with new developments every year. So instead of minimum criteria, it is far preferable to a list that reflects only a single point in time.

Finally, having multiple rating systems in the marketplace and spurring competition among rating systems is a worthwhile strategy as this competition has led to significant improvements among all rating systems.

I also wanted to mention that we strongly

support the DOE's intention of creating a list of green building rating systems that are determined to meet the criteria adopted in the rule and to make that list available to federal agencies as guidance. For that list we urge the Department to include the following green building rating systems that all meet the statutory criteria. Green globes and the ANSI GBI green building assessment protocol for commercial buildings developed by the green building initiative, the National Green Building Standard developed by the National Associate of Home Builders and the International Code Council and Built Green Canada.

All of these programs require independent assessments, have a balance in transparent process for developing their requirements and are nationally recognized. It's important to note that both the ANSI GBI, Green Building Assessment Protocol and the National Green Building Standard are approved by ANSI whose guidelines are among the world's most respected for the development of consensus standards and ensure a balanced transparent and inclusive process.

Furthermore, as Erin noted in her remarks from Green Building Initiative Green Globes has been recognized and used governmentwide. It is already being used in 35 federal agency buildings, is

recognized in 20 states and is recognized by the Council of State Governments, a bipartisan organization of state policymakers nationwide.

In addition to these programs meeting the DOE proposed criteria they all provide two additional important aspects; recognition of the positive environmental aspects of wood products, and recognition of all credible forest certification systems.

In conclusion, I again just want to stress our strong support for DOE's proposed minimum criteria for green building rating systems. It's a positive development and an appropriate role for government as federal agencies work to promote energy efficiency and a more sustainable environment.

Thank you.

MR. RABA: Thank you.

MR. NASSERI: Thank you. Any questions?

(No response.)

MR. RABA: May we hear from the American Wood Council?

MR. GLOWINSKI: Thank you and good morning. I guess when you go towards the end you start to sound like you're just saying "me too" but I will try to be brief.

My name is Robert Glowinski. I am the

President of the American Wood Council. AWC is the voice of the North American Wood Products Industry. We represent a renewable construction resource that absorbs and sequesters carbon and employs over 180,000 people.

I appreciate the opportunity to speak today. The Council is a strong supporter of improving the environmental performance of our nation's building stock. We support the proposal's goal to ensure federal buildings become more energy efficient and incorporate sustainable design standards.

Wood buildings are easily insulated for optimal performance without a need to overcome thermal bridging and thermal mass energy loss. As a sustainable building material, wood requires less energy to produce, transport, construct, and maintain than alternatives. Notably, as a material principally manufactured using carbon neutral biomass energy and having the unique characteristic of sequestering carbon, wood can make significant contributions to reducing greenhouse gas emissions.

Federal agency use of wood products can help federal buildings achieve energy efficiency and other applicable requirements in the proposal.

The Council supports the proposal's approach

to green building certification systems that are open, transparent, and performance based. DOE proposed three criteria, one with a subpart and is considering two more for green building rating systems that federal agencies may use. The DOE approach correctly recognizes that there are multiple green building rating systems currently available that additional systems may be developed and it is appropriate for government to recognize all compliant systems without favoring one over another. Setting objective criteria for systems to meet and determine which systems meet that criteria will provide federal agencies with the flexibility to use systems tailored to their particular needs. While not all green building rating systems appropriately recognize the full contribution of wood products to energy and environmental performance, there are several the meet the DOE proposed criteria and fully recognize the value and contribution of wood to superior environmental performance.

Expanding the use of wood products by federal agencies would certainly help the U.S. government come closer to achieving both its energy efficiency and its sustainability goals. I also would note that I agree with both Bill Hall and Nadine on DOE determining which systems meet the criteria listed. I believe that

having that kind of list would help to avoid any inconsistent assessment among and across agencies.

Thank you for the opportunity to discuss these issues and of course I'm available for any questions.

MR. RABA: Thank you.

MR. NASSERI: Any questions?

(No response.)

MR. RABA: The Hardwood Federation. Is a representative from the Hardwood Federation here today?

We have a statement that we will have entered into the record.

Let's see, Mr. Jerry Schwartz, is he here?

PARTICIPANT: No, I spoke on behalf of the coalition.

MR. RABA: Okay. Thank you.

Charles Floyd?

(No response.)

MR. RABA: Okay. Jerry was representing the American Forest and Paper Association and Charles is with the Tall Grass Strategies.

Again, we'll have statements in the record from them too. But we will enter those as well. Thank you.

Moving along. Dupont Companies; is that

correct?

MR. APPLE: That's correct.

MR. RABA: Thank you.

MR. APPLE: Good morning. My name is Todd Apple I'm with the Dupont Company. Dupont has been around since 1802 providing a variety of products and services that are science-based.

In this particular field Dupont has been providing building products and services through its building innovations business for over 30 years and building innovation is dedicated to reducing its environmental footprint and enabling zero net energy buildings that help engineers and designers and architects reach their energy management and performance-based design goals.

So I appreciate the opportunity to comment today on behalf of Dupont and we fully support DOE's efforts in this area to improve the energy efficiency and sustainability standards for new federal buildings. We are convinced that the federal government can play a significant role in driving the entire building construction market towards more sustainable building practices.

I'll restrict my comments to two sections that were of particular interest to us today. With

regard to part 433.4 of Energy Efficient Performance Standards to optimize the energy performance of buildings. Cyrus noted in his morning comments that DOE did indeed issue a final rule back in December 21st, 2007 that incorporated the energy efficient standards that were required by Section 305 of ECPA by incorporating ASHRAE 90.1 2004 version for commercial buildings and IECC 2004 for residential. However, a critical component of any energy optimizing strategy is the consideration of air leakage across the building envelope and its impact on a building's performance.

There's many references that discuss the impact of air leakage on HVAC energy use according to the Department of Energy, National Research Code Council Canada, NRCC and others, uncontrolled air movement through the building envelope can account for up to 50 percent of heating and a significant part of the cooling loads representing up to greater than 30 percent of a building's annual HVAC costs. Unfortunately ASHRAE 90.1 2004 or 2007 versions have no quantitative air leakage rate requirements for the building envelope.

Now, the good news is ASHRAE 90.1 2010 does include requirements for continuous air barrier materials and assemblies. And we realize that DOE is

required to review and revise energy efficient requirements for fed buildings as the voluntary industry codes are updated and also recognize that DOE intends to address this issue in a separate rulemaking. However, we just strongly recommend adopting the continuous air barrier requirements in ASHRAE 90.1 2010 standard.

Furthermore, we believe that in order to have the greatest impact on the ultimate performance of the building in addition to a material and assemblies meeting of specifications it's imperative to test whole building air tightness. In our experience improper installation techniques and poor quality assurance throughout the construction process can result in very poor overall building performance with regard to air leakage. And therefore we are recommending that DOE consider adding an additional performance standard requirement for the whole building performance such as the United States Corps of Engineers air leakage requirements. USACE requires all new buildings to pass a blower door air leakage test where the results must be less than or equal to .25 cubic feet per minute per square foot of exterior envelope at a 75 Hascal pressure.

We also believe this is consistent with DOE's

proposed requirement that a federal agency demonstrate that the energy used at a minimum in the first year of a building's green building certification is consistent with the energy use identified as part of that process and consistent with -- this is also consistent with the guiding principles of an MOU that directs the federal agencies to establish a whole building performance target.

There's another section with regard to Part 433.6 under the sustainable design principles for siting, design, and construction. Specifically around paragraph 5 and moisture control, we are concerned that potential moisture issues could develop in some default assemblies without more specific language around moisture control.

For example, the energy code requirement for continuous exterior installation could lead to wall assemblies with double vapor barriers or retarders and drastically reduce the assemblies' ability to manage incidental moisture intrusion. And so we would recommend that consideration be given to incorporate language that would prevent such unintended consequences.

And, finally, we do support DOE's goal requiring federal agencies to demonstrate the energy

use of a certified green building is indeed consistent with the energy targets that were identified under the green building certification program. And we also support the subsequent energy auditing requirement that can be periodically conducted throughout the building's useful life to ensure that the building maintains its performance level.

So that concludes -- we'll be filing additional comments before the August 12th deadline. So thank you for the opportunity to participate in the meeting and providing comments.

MR. RABA: Thank you.

MR. RABA: Thank you very much, Todd. Any questions for Todd?

MR. NASSERI: I have some more explanation Todd brought up two or three issues that I would like to tell you (inaudible) (off mike) my presentation. One thing that was amended by Congress said that any time the referenced standard is updated we should visit those standards and if it's positive determination they should be raise the floor. What we did was we have that on the agenda to do that determination. That is for ASHRAE Standard 90.1 and this is going back to the air leakage issue. As I -- as you recall we are having (inaudible) 2004. ASHRAE every three years updates

their standard and the 2007 is already published and also 2010 will be available in next meeting of ASHRAE which would be in the winter in Las Vegas, a very good location. And so then as ICC is concerned, the same thing, the 2009 is already published and they're working on 2012 issue. What we have to do, we have to visit both of those baseline standards for federal buildings and we are going to do that.

One thing, as you mentioned, air leakage is mentioned in the 2010 ASHRAE. Also, I'm glad that you mentioned that we worked very closely with the -- and talk about air leakage as part of the FEMP responsibility to coordinate and work with other agencies and Alexander Juval and other people are working Seril, they work are very much again with Seril and once you have found the issue with the air leakage they are very much -- are doing that with other agencies as part of our responsibilities. We are considering all that. I just want to mention that. Okay. Very well.

MR. RABA: Let's proceed. U.S. Fuel Cell Council.

Say again, please?

PARTICIPANT: (Off mike.)

MR. RABA: Would you step to the microphone

please and state your name?

MS. HARKINS: I'm Erica Harkins for the U.S. Fuel Cell Council. Bob Rose was going to make a statement, but he's not able to attend today.

MR. RABA: Did you want to make it on his behalf?

MS. HARKINS: Oh, okay.

MR. RABA: You don't have to.

(Laughter.)

MS. HARKINS: Okay. I won't.

MR. RABA: We'll have this in the record. It's in the record. Thank you. Thanks for the information.

MR. NASSERI: Great.

I think, Jim, at this point, did anybody else that -- I don't know if we have received all the statements, anybody else that would like to make any presentation? It looks like we are ahead of our schedule very well.

MR. RABA: Well, that's good so far. And the floor is open. Anybody who would like to have a chance, opportunity, you would like to comment, raise your hand and have me recognize you. Yes, sir.

MR. HANSON: My name is Dane Hanson with the International Association of Plumbing and Mechanical

Officials. Just a bit of background about ourselves. We were founded in 1926. Currently we are the only trade associate developing plumbing codes which are -- that are accredited by the American National Standards Institute in the open consensus process. The membership of IAPMO is comprised of plumbing and mechanical inspectors, engineers, code officials, plumbing and mechanical contractors, water energy efficiency experts, manufacturers of plumbing and mechanical and building products. Currently our codes are adopted throughout the country and throughout the world and recently were adopted in the country of India.

It is estimated now that approximately half the world's population is under IAPMO code now with the adoption of India.

But my purpose here today that I'm talking about is under the industry standards in the NOPR document it mentions several items and several standards out there and currently one that we felt that needs to be addressed and brought up is the -- it's called the International -- IAPMO's green plumbing and mechanical supplement. It's a code supplement which is a very aggressive green stretch code.

A little background about that, it wasn't

just an -- it was an open consensus process as well with input from ASHRAE, the American Rainwater Catchment Association, America for Water Efficiency, the Green Mechanical Council, Green Plumbers, The Plumbing Manufacture Institute, which are the manufacturers of the plumbing products, PHCC, World Plumbing Council, United Association of Plumbers which is about 380,000 plumber unions from across the country. These are all people who gave input into this code. And it does provide the first and only green plumbing supplemental out there today. So we really encourage that.

Just an estimate of Chapter 4, this code of this plumbing supplement by adopting the water -- indoor water use, you'll save between 20 and 30 percent of water usage just by those provisions in there which addresses rain water, gray water, and on and on. And we'll be providing written comments to further up on that. But I just wanted to get that out there.

MR. RABA: Thank you.

MR. NASSERI: Thank you.

Have you sent that -- we recommend that you send that with your comments?

MR. HANSON: Yeah, we'll definitely. Yes.

MR. NASSERI: Any questions?

(No response.)

MR. NASSERI: Anybody else?

MR. RABA: The floor is still open to anybody. Yes, sir.

MR. ROSSOLO: My name is Mark Rossolo. I'm with the Greenguard Environmental Institute. We'll be submitting comments that will reiterate everything I'm saying. But I just wanted to jump up really quick because there's been a couple of things said that I wanted to elaborate on.

To give you a quick background we've been involved in the indoor air quality business since 2001. We certify products for the chemical emissions and we give them a rating. We also do work in the mold and moisture category. We have an ANSI standard that deals with that. The GEI MMS ANSI standard. We actually share Dupont's concern about the moisture category being very vague. So we would strongly encourage you to tighten that up a little bit. And in our comments we'll be giving you some specific guidelines to that.

I wanted to talk a little bit about the products that you are putting into these buildings. We've heard a lot of the representatives talk about lifecycle assessment and making sure that you are using an LCA which we very strongly support in terms of

overall sustainability. However, what I haven't heard of is anybody talking about the human health aspect of this and that's ensuring that these products you're putting in have a low chemical emissions.

The problems that we are seeing, and we have a number of studies of very highly rated LEED buildings out there that are showing this and it's not just LEED that's the problem, but there's also other green buildings that show this as well. They have very tight energy envelopes, very tight building envelopes and so what that means is your chemical emissions inside those buildings have a lot more effect on the human health than the buildings that weren't quite as sealed up, they weren't quite as energy efficient.

So it's very, very important that we're thinking about these chemical emissions that are coming off of these products, whether it's your insulation, your flooring, your ceiling tiles, whatever, I strongly encourage that that be some sort of -- I don't want to say prerequisite but very strongly looked at.

The problem with in LCA is you're weighing in a lot of different factors, where it came from, what it's used, the type of energy it did, and human health sometimes can get pushed to the bottom of that because it's not as fun to talk about or it doesn't have quite

the pay back. But for these buildings, particularly a federal building where you're setting precedent and you're showing the country what's important, making sure that there's that human aspect is very, very important. So I just wanted to say that. So thank you very much.

MR. RABA: Thank you. That's helpful.

Anyone else, please?

MR. NASSERI: Let me say a few words before the next one. I think some of these issues in your air quality and things are somehow covered in ASHRAE 62.1 and 60.2. Russ, do you confirm this?

MR. CARLSON: Yes.

MR. NASSERI: Yeah. So we do have some -- those are basically the reference standard for sustainability. So we do have. And then also 55 will basically cover some of the issues such as you were mentioning.

MR. ROSSOLO: Can I respond?

MR. Calamita: If I could also just add one more thing. If you take a look at the NOPR and the proposed reg text, we do have a section on low emitting materials. So I would direct you to that and if you have any specific comments on that provision as proposed, you are welcome to offer them now or through

your written comments.

MR. ROSSOLO: Yeah, we'll talk about the low emitting -- we had some very specific comments about that. Our really only concern we like that that's in there, it's a little general. It's so much of the moisture so it leads a lot open for interpretation. But we did notice that and we do know that there is some thought to that.

MR. RABA: Is there a response? You've been very patient, thank you.

MR. HALL: Oh, that's fine. We're way ahead of schedule, so that's the good news.

I just wanted to point out that each of the major green building rating systems that will meet the criteria also have credits for the use of low VOC materials such as for vinyl flooring there's a floor score program that certifies that products meet the California 1350 low VOC requirements and that's in Lane, it's in Green Globes, it's in NAHB. There's a similar requirement in program for carpet. So I think a lot of the VOC issues and indoor air quality issues are already being met by the rating systems that will be recognized as meeting the criteria.

And just to follow up on an earlier point, and for that reason, since all these rating systems

actually do incorporate EPP requirements, whether it's for indoor air or biobased energy efficiency that was the basis for at least my concern that adding a EPP requirement that goes beyond that is something that's not needed. Thank you.

MR. RABA: Thank you. Ah, more hands go up.

Yes, sir, you're first and second over there.

MR. CARMEL: Dave Carmel with the International Code Council. Just a clarification or correction for the record. Mr. Hanson stated that IAPMO is the only ANSI accredited organization that publishes a plumbing code. The fact is, the International Code Council is accredited by ANSI. We published, I think, seven or eight ANSI accredited standards and we publish the International Plumbing Code which is used in over 40 states. Thanks.

MR. HANSON: But isn’t the International Plumbing Code not done through the ANSI accreditation process?

MR. CARMEL: And neither is the Green supplemental, as I understand it.

(Simultaneous conversation.)

MR. HANSON: But our uniform plumbing code which I was speaking about is.

MR. CARMEL: I didn't say it was.

MR. HANSON: I know, but you just said that your International Plumbing Code is an ANSI accredited --

MR. CARMEL: No, I did not. I corrected your statement, sir.

MR. RABA: That's Dan Hanson over here from IAPMO and --

(Simultaneous conversation.)

MR. CARMEL: I was simply correcting your statement, you said, IAPMO is the only ANSI accredited organization --

MR. HANSON: No, our plumbing code.

(Simultaneous conversation.)

MR. HANSON: Our plumbing code is the only ANSI accredited plumbing code.

MR. CARMEL: Well, that's not what you said.

MR. RABA: Okay. Thank you. Noted for the record.

Yes, in the back. Come on down.

MS. VAUGHAN: Good morning. And thank you. That is sort of spur or the moment, but my name is Ellen Vaughan and I'm with the Environmental and Energy Study Institute. I lead the buildings initiative for EESI. And I just wanted to make a couple points. We very much support the notice of proposed rulemaking

intention. And some of the comments that were made today, I think talked about performance attributes and just in general even though EESI our big focus is on sustainable development and reducing greenhouse gas emissions through energy efficiency, focus on renewable energy, so, of course we would love to see all building be net zero energy carbon neutral if possible.

But, we recognize that all performance attributes of a building are, you know, essential. If you have a green building that falls down in a wind storm, it's not very sustainable. So we really, really support this approach of holistic planning and looking at all attributes at the outset, security, accessibility, energy efficiency, productivity, functionality, you know, all those things, the high performance building caucus and coalition has a lot of information on this as does the whole building design guide that many agencies use. So that was one point.

Also so critical to use the integrated design process, integrated team approach and there's no magic bullet, there's no one product, no one rating system that's going to create a sustainable building. The only magic bullet might be that you use this integrated approach.

We've been disappointed to see that FEMP has

eliminated most of its training on whole building design and so we are hopeful that that could be a focus.

And, finally, just wanted to recognize the importance again of thinking about how all of these things are connected. And I know that, excuse me, DOE is addressing the fossil fuel reduction requirements in EISA separately, but I just really encourage that these things are thought of together. Obviously need to think about what renewable energy requirements will be needed, excuse me, to reduce energy -- fossil fuel energy in sustainable buildings. So thanks so much.

MR. RABA: Thank you.

MR. NASSERI: Let me, you mentioned the whole building design training. We do work with whole building design very much in their meetings. And we basically FEMP appropriated some funding for that activity of this whole building design. And if you think FEMP should focus more on training on that, we kind of leave it to them, you know, in supporting their activities for that.

MS. ROGERS: Hi. I'm Melissa Gallagher-Rogers. I'm from the U.S. Green Building Council. I just wanted to echo some of the comments that were made earlier today about focus on building performance. And

mention that in addition to the LEED for new construction standards which are widely used we have about 3,000 projects from the federal government in the queue right now. There is a LEED for existing buildings operations and maintenance rating system and then in addition in terms of focusing on building performance after certification we have a building performance partnership that allows for tracking and management of data and looking at building performance. So certainly we will provide additional written comments, but I just wanted to echo that support. It's really critically important that we all focus on the building performance post-certification. So, thank you.

MR. RABA: Okay. Thank you. Further volunteers to speak.

MR. NASSERI: Jim, I recommend -- it looks like we are really ahead of our schedule. If we can go to that session on question and answer and then if possible we basically can adjourn before our scheduled 12:30. That's my recommendation.

MR. RABA: What a motivational speech that is.

(Laughter.)

MR. RABA: Well, that's a good point though.

We've heard some great comment, some great statements, a lot of good interest, a lot of good togetherness if I may say that on these matters. It's all positive right here. And I think we would like to respond, and by popular demand probably ask for going back and revisiting the highlighted questions that were in the last three or four slides of your handout. So while I play with this to make it work, please go back and take a look at your handout where it began, what are your comments? And think first to direct some of your thoughts, again, refocus them if you will, on the first one, how do balance cost increases versus improved sustainability. Cost increases improved sustainability. Any thoughts directed on that question?

(Pause.)

MR. RABA: Going once. Right there.

MR. BARRY: Hi, my name is John Barry. I represent the International Union of Operating Engineers National Training Fund. We represent a group of union stationary engineers in the United States and Canada that are 120,000 strong, and the people that most often operate and maintain commercial facilities, including this one, and a lot of other government facilities. I have a couple questions. One is with

regard to how to balance cost increases and improve sustainability. All the plans, the best made plans are normally laid to waste by lack of execution. The people that are normally tasked with making sure that these facilities operate and are maintained correctly are stationary engineers. One of the things that I don't see in this particular section and in the coverage of existing buildings is a way to make sure that it happens. And including stationary engineers is always an afterthought because they're always there after the building is built. They're the people that are most likely to be able to deliver the thoughts, ideas, and make the execution of the plan work.

So, my question would be, have you considered including some provision in this and commissioning processes that would enable there to be somebody like a stationary engineer that has the on-the-ground, real-life experience, somebody like myself, I'm a licensed engineer in the District of Columbia. My career has been made off of running facilities like this and making sure they're right. After they're designed and they're put in place, it's kind of a done deal. It's then my job to make it work. So of all of the people that I represent, and all of the folks that can have an impact on this program being efficient, you know, how

is the energy auditing going to be done that Todd from Dupont talked about? How are the requirements that you're, you know, putting into place going to be made whole? And, you know, the federal government, if they have sustainable building policy how are you actually going to make sure that it's implemented and recorded? So balancing costs versus improved sustainability a lot of times, and I'll speak specifically to that, I've experienced -- I've actually brought buildings out of the ground from pure ground all the way to the top, read the specification, made sure that they were put in place, did the punch list and saw how the costs would drive sustainability and how things are taken out of the building design because it costs too much.

Going forward the federal government has a deficit as do most of the states and everybody else known to man. In this economy we're in a poor place to be demanding that we have highly efficient facilities when we have champagne taste and Budweiser wallet. You're not going to make it happen.

In a lot of cases the proof of the pudding is in the tasting, how well do we do with what we do? Case in point, we're standing in a room that I don't consider to be extremely comfortable. No disrespect.

(Laughter.)

MR. BARRY: There's a pneumatic thermostat on that wall in the age of electronics, there are no return vents in here and there is definitely a lot of ways to make this place operate much more efficiently as are all facilities. So my question would be, who is going to implement the plan? What are going to be the checks and balances to make sure that they happen? And how are we going to implement and provide a strategy that will enable us to do the things that you want to do without it being 100 percent cash input? Because there are a lot of ways to make existing buildings perform without going broke. Thank you.

MR. RABA: Most helpful. Thank you very much.

MR. CALAMITA: This is Chris Calamita again with DOE. If I could just respond broadly to some of those points. As Richard Kidd had indicated early on, this is one component of multiple activities that we're pursuing both under Executive Order and under statute. So this is to set up the design criteria. Section 432 of EISA directed the federal government to set up a commissioning and recommissioning process and then also identify energy managers for buildings and has an auditing requirement. So we're looking to that as the complement to what we're doing here.

MR. BARRY: To redirect real quick. One thing, and that's great stuff. We did see that. One of the things that I did want to say was that in the design process it's very unusual to have people at my level part of that process. But it's something that you may want to consider because it's not been done. I know it can be done. I know that this process can be done more efficiently if you have the people who are actually going to be in the building present during that process and part of this process. So there are a lot of -- there's a lot of good that can be had there and it's not necessarily something that has to be done for everything, but there's a lot of input you can get from people at the craft level that can help you make your buildings from the design phase more efficient.

Thank you.

MR. RABA: Over here, first.

MR. MONTGOMERY: Hang on, I've got another answer for you.

MR. RABA: Yes, please.

MR. MONTGOMERY: I've got another answer for you. Ross Montgomery ASHRAE. From the ASHRAE perspective part of our comments we're asking to have a lot of our other standards included in this Part 433, one being guideline zero which is on commissioning and

it involves the maintenance and operation personnel from the get-go, from the beginning to the end. And then also another standard that we publish is the maintenance and operation standard 180 which takes the building after it's built and then properly maintains and operates it for its life. So we're asking for those two things to be included. So hopefully we can help you there.

MR. RABA: Great. Now here. Thank you.

MS. SHAFFER: Erin Shaffer, Green Building Initiative. I just want to add and support the comments that were made. In fact the Green Globes systems for new construction, major renovation, and our existing building tools provide within the project management section an entity gets credit or gets points for setting up and having those kinds of ongoing meetings with the key players, the engineers, the unions, the tenants and whatnot so that they are involved in the process, just as you stated, from the early stages then they can provide significant input to the design and then get to the point where there's commissioning and actual operations of the building because we think that's a critical component of having a building that actually operates to the design specs.

MR. RABA: Great. Thank you. Yes, sir.

MR. APPLE: I would just add one comment. My name is Todd Apple with Dupont. We were recently involved with a workshop that was conducted jointly by AIA, American Institute of Architects and the General Services Administration. Kevin Campshore's organization on the high performance federal buildings. On this issue specifically around commissioning, recommissioning, and persistent commissioning, if you will, how and he had representatives from every agency in the federal government with regard to facility managers and working on this longer-term solution, how do you make these changes stick over the long term in the operation. So there is, I guess, good news that there is work going on inside the agencies that identify this as a gap that we need to close.

MR. RABA: Great. Thank you. And you'll be submitting written comments; yes?

MR. APPLE: Yes.

MR. RABA: Great. Thank you.

MR. BARRY: Okay. Next one? Should existing green building systems be preapproved as meeting acceptable certification systems that agencies can voluntarily use; and two, sustainable design requirements in the rule. Thoughts and comments on that area. In the back, please?

MS. BLOCK: Nadine Block with the Sustainable Forestry Initiative. We did address that question in our statement, but I actually did just want to add one additional point which is we do support, as I mentioned, a list that would approve green building rating systems that meet the criteria laid out in the rule. But as I noted, this is a rapidly changing arena and I would encourage -- I don't believe I saw in the rule any mention of how that would potentially be updated in the future. So I would encourage the agency to consider how that can be continually reviewed and updated as needed as there may be new standards or rating systems that come into the market that would be appropriate for agencies to consider as well.

MR. RABA: Great. Thank you. Anybody else?

MR. HALL: Bill Hall, just for the record just to reiterate that the North American Building Coalition supports DOE's making that determination in the final rule and I know that the Wood Council did as well.

MR. RABA: I see nodding of heads in the affirmative. Okay. Next one.

How to apply standards leased to buildings. This one here, does anyone have any comments on this particular one here?

(No response.)

MR. RABA: Three percent or other limit on total construction costs increase the rule.

Correctional lifecycle on lifecycle cost increases?

Am I going to fast?

Too slow?

PARTICIPANT: Too fast.

MR. RABA: All right. Thank you for stepping up.

MR. COLKER: Hi, Ryan Colker, National Institute of Building Sciences. To get to the 3 percent or other limit on total construction cost increases, I think that there's probably some arbitrariness, number one, to that 3 percent. And then second to that, total first costs should not be a consideration in making decisions on construction. It should be based off of lifecycle costs and other requirements that are mentioned within the proposed rule. Thanks.

MR. RABA: Thank you. Of course. Thank you.

Others?

(No response.)

MR. RABA: Okay. Then, first of all lifecycle cost increases? Comments, thoughts?

How should "major renovation" be defined?

I presume written comments we'll hear from you there.

How should the requirement for 30 percent hot water demand be provided by solar? If a lifecycle cost effective?

Yes, sir.

MR. CARLSON: This is Matt Carlson from Sunnovations. It looks like I'm the only solar hot water person in the room, so maybe I should comment. But really my question was about the question which is, is it -- when you're asking how it should be implemented, is it in the measurement of what the load will be or the post-construction measurement of whether that 30 percent requirement is being met? Because those are two different questions, I guess.

That the load estimation is a relatively straightforward one. For residential applications there are studies including one by the Florida Solar Energy Center that has done some modeling on proposed load or the load in a residence based on location and number of occupants, solar energy, et cetera. And then on the commercial side California has a substantial solar hot water program where they've done a lot of work. So that may be one program that you may wish to

look at for some guidance.

On the back end in terms of measuring whether the 30 percent standard has been met, the solar rating certification corporation, the SRCC which does get some, I must say, very modest funding from the Energy Efficiency and Renewable Energy (EERE) is the standards and certification organization for the solar thermal industry and it does provide guidance as to what the estimated output for a given system will be. And that's an OG300, they are OG300 rating and certification program.

MR. RABA: Okay.

MR. COOK: Jim, if it's all right, this is Keith Cook from Phillips Lighting representing NEMA. We would like to comment on a few of the previous items. On the first one, NEMA does not agree with the conclusion that leased buildings should be limited to only those where the agency has significant design control. We feel that EISA 2007 set the goal of achieving net zero commercial buildings for all new buildings by 2030.

Half of the commercial buildings stocked by 2040 and all commercial buildings by 2050. If we are to achieve this goal the federal government should require that any space it leases, not just new leased

buildings, meet a minimum level of energy efficiency.

The federal government has to set the direction by incorporating all space it utilizes into energy considerations. At the very least every space, building utilized by the federal government should meet ASHRAE 90.1 2004 for other than residential and ICC energy conservation code 2006 for residential.

On the second and third bullets we would like to comment that the reference to the 3 percent first cost limitation should also be removed. And NEMA does not agree that the 3 percent figure should be added to the extent practicable language. Evaluations should be based on the increased cost compared to the energy of other cost savings over time. When standards such as ASHRAE 90.1 were developed the cost justification are already taken into account. The objective is to ensure that the total lifecycle of the building is included as part of the overall cost evaluation. In many cases more than the 3 percent increased costs can easily be recovered by the energy savings over time.

And, on the major renovations. NEMA agrees that the 25 percent threshold for major renovations is suitable. We would also like to note that the renovations could result from any situation including new space, changes in use of the building, or

renovations to take advantage of increased operating efficiencies. Thank you.

MR. RABA: Thank you. I'll ease up for a moment to look the over again if there's anybody who would like to comment or questions on these items of further remarks?

Any?

(No response.)

MR. RABA: Should ASHRAE indoor air quality guide or other industry IAQ guides or standards be referenced in the rule?

Yes, please, up there first and then over here at the table second.

MR. ROSSOLO: Mark Rossolo from Greenguard Environmental Institute again. I'll just -- I think I already pretty much said my piece. You can understand why I'm up here. We are very favorable and supportive of the ASHRAE indoor air quality guide. In fact, Greenguard certification is listed, I believe, in their reference section. I would strongly urge you to look at some of the other certifications out there for IAQ. Greenguard obviously being, we feel, the most stringent. There's also industry-based ones such as the one that Bill brought up for Floor Score that we would encourage you to look at as well.

So we do think that certifications in addition to the IAQ guidelines would be a good idea specifically when you're talking chemical emissions and we'll elaborate that. But I just wanted to reiterate that point.

MR. RABA: Okay. Yes, please.

MR. MONTGOMERY: Ross Montgomery, ASHRAE. I'm obviously going to speak in support of the ASHRAE IAQ guide. But I want to remind everybody that it was a joint effort of ASHRAE, AIA, BOMA, USEPA, SMCNA and USGBC, so it wasn't just ASHRAE, it had lots of other people involved.

MR. RABA: Good point. I'm sure they appreciate it. Yes, come back to us.

MR. BARRY: John Barry from the Operating Engineers. We submitted comments on this particular one. The International Union of Operating Engineers started an indoor air quality program in 1993 and has been doing that training of engineers. We have now reached a threshold where we've trained stationary engineers with responsibilities of over two billion square feet of office or commercial space in the United States. And we recently released an indoor air quality training guide as did ASHRAE and it was in conjunction with the U.S. EPA. So we had said in our comments that

if that was going to be recommended it should be used in conjunction with the IAQ guide for stationary engineers that operate and maintain these facilities.

MR. HALL: Bill Hall again. And just to reiterate what I said earlier, and in support of what's been said since, we do believe DOE should reference appropriate industry IAQ guides. And the starting point as to where to find them should be in the rating systems that meet the minimum criteria so Fourscore would be there, the carpet standard would be there, ASHRAE is there, and a host of others. Thank you.

MR. RABA: Good point. Anyone else, please?

Radon. How should radon be addressed in commercial and residential buildings? Yes, please.

MS. SHAFFER: Erin Shaffer, GBI, that's actually an issue that came up a number of times as our Green Globes was going through the ANSI process and we'll be submitting comments on radon in commercial buildings in our more complete written comments.

MR. RABA: That's important. Thank you.

Others, please?

(No response.)

MR. RABA: How should construction waste be addressed?

(No response.)

MR. RABA: Do you need to give it some thought? Okay. We can go back if we want to.

Should ozone depletion --

MR. NASSERI: Depletion.

MR. RABA: Should ozone depletion be addressed and if so, how?

Ozone depletion.

Think about it.

Should actual energy use in buildings be designed to this code to be collected and reviewed and if so, how should this data be used? There's a lot of thought going on out there.

Yes, please.

MR. MONTGOMERY: Ross Montgomery, ASHRAE. Well, obviously if that energy data is collected it would be used as a part of the CBEC's database which has been going on for years and years and years. So it would be a good idea.

MR. RABA: And CBEC's is?

(Simultaneous conversation.)

MR. RABA: Commercial Building Energy Codes.

Thanks. Thank you.

Yes, please.

MR. COOK: Keith Cook representing NEMA. NEMA believes that the reviewing energy use after the

first year is an extremely important consideration that must be included in the final regulation. We note that this is consistent with the existing major programs such as ENERGY STAR for buildings where 12 months of operational data is required before the rating can be obtained. Our experience shows that most buildings, even those designed using suitable -- excuse me sustainable design principles do not achieve their expected energy levels without continuous lifecycle management. We would further recommend that the DOE include rules that require reviews at four-year intervals as well. Improper adjustments to the system by users as well as improper maintenance can have significant impacts on the energy performance and can occur at any time during the life of the building.

In addition, DOE should consider language that will require that appropriate steps will be taken to correct any problems found during the reviews. Thank you.

MR. RABA: Yes, go ahead.

MS. SHAFFER: Erin Shaffer, GBI. I want to comment on that because in fact one of the tools that I mentioned that we have that works in conjunction with our new construction tool is our continual improvement of existing building tool. It incorporates the ENERGY

STAR Portfolio Manager within it. It does 12 months of operational data. So it calls for utility data, so you've got energy and water. So we would agree that use of actual energy data is great to incorporate, track and incorporated into the CBEC database, but we would say going beyond just energy to incorporate water, environmental management, the kinds of things that are in a rating system that looks at the whole building and all of the operation and maintenance performance that actually is relevant. It's not just energy.

MR. RABA: Good point. Thank you. Yes, please.

MR. APPLE: Todd Apple with Dupont. Just adding, we believe that in energy advance metering, requirements of federal buildings, I believe this is statutory that is has to be for federal buildings for this energy use to be collected. Is my understanding correct? By Executive Order.

MR. CALAMITA: Chris Calamita, DOE. You're correct there is a statutory requirement for advance meters to the extent practicable. And as I said, there's a number of auditing requirements both through Executive Order and through statute.

MR. RABA: So, it's been great so far.

MR. NASSERI: Go over your closing remarks.

MR. RABA: Well, I'll tell you what, you've been great today. We've covered a lot of ground, a lot of good things today to take back for consideration. We are still away ahead of schedule to your credit. And I think you deserve a round of applause. So give yourselves a round of applause.

(Applause.)

MR. RABA: If you are interested, the coffee shop downstairs, Dunkin Donuts and Subway or the cafeteria west end. Brenda has some evaluations to hand out on the table. They're in the back of the packets. Before you leave, please give us your evaluation comments of today's public meeting. And I presume each has given Brenda a business card for your attendance today to ensure that you are kept informed of future rulemakings. Please.

Thank you very much on behalf of the Department of Energy. Cyrus, conclude

Closing Remarks

MR. NASSERI: Okay. Thank you very much. Again, we are looking forward to seeing your written comments. And definitely the one that Jim was reading to you was not enough time for you, you know, to really give us any comments, we expect to see your written

comments with the errors that I identified specifically and all that and your comments. We really appreciate your participation and your efforts, you know, to help us come up with a good final rule on sustainability. Thanks a lot.

(Whereupon, at 12:08 p.m., the meeting was concluded.)

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before:

U.S. DEPARTMENT OF ENERGY

In the Matter of:

SUSTAINABLE DESIGN STANDARDS

FOR FEDERAL BUILDINGS

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: August 18, 2010