Update on the Standard Work Specifications for Multifamily Energy Upgrades (text version)

Below is the text version of the Webinar titled "Update on the Standard Work Specifications for Multifamily Energy Upgrades," originally presented on November 20, 2012. In addition to this text version of the audio, you can access a PDF of the slides, a resource document, and a recording of the webinar.

Chuck Kurnik:
Good afternoon, everyone. This is Chuck Kurnik with the National Renewable Energy Laboratory, and I'd like to welcome you all to today's webinar, the Update on Standard Work Specifications for Multifamily Energy Upgrades.

We'll be addressing questions at the end, and what you can do is type a question in the Questions bar on your GoTo Meeting task bar. And we'll be selecting questions and answering those at the end. And everyone will be muted, so you'll only be hearing the presenters speak. And so what I'd like to do now is introduce our presenters.

And so we've got Jen Somers, the Team Lead for Training and Technical Assistance in the Office of Weatherization and Intergovernmental Programs at the U.S. Department of Energy; David Hepinstall, the Executive Director of the Association for Energy Affordability; Nick Dirr, Director of Multifamily Technical Services with the Association for Energy Affordability; and Chuck Kurnik, Project Manager with the National Renewable Energy Laboratory.

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So for our agenda, today Jennifer will be leading off with the project context and giving us some background. Dave Hepinstall of AEA will be giving us the project process. Nick Dirr of AEA will be describing what an SWS is and how to use that. And at the end, I will describe how to use the comment tool. And so one bit of context I should give is that we right now are accepting – we're in the final public comment period for the manufactured – er, I'm sorry – multifamily standard work specifications. And so I'll be going through on how to use – how we'll be accepting comments, and then we'll also be providing the URL for where to leave those comments.

So with that, I would like to kick this off, and I'll ask Jen to get started. So thanks a lot. Jen.

Jen Somers:
Okay. Chuck, can I have the first slide?

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So thank you all for joining us today. I'm gonna start off by providing a brief background on the guidelines project. The Guidelines for Home Energy Professionals is a collaborative effort to engage the home performance industry in developing a suite or resources that include work quality specifications, training program accreditation, job task analyses and certifications for workers. And the overall goal of the project is to help the Weatherization Assistance Program demonstrate the quality of the program as well as to serve a national need to create a vital and robust home energy upgrade industry.

Through these tools, Weatherization is working to help define residential – the residential upgrade work as a distinct and professional industry as well as an easy-to-define product for consumers. And so the standard work specifications are the foundation of the guidelines effort and include documents covering single-family, manufactured housing and multifamily housing. And in order to set these standards for the performance of workers, training programs and the overall effectiveness of an individual job, we need to first define what quality looks like.

So if you look at the work of an energy efficiency retrofit crew measure by measure, this work is broken down into desired outcomes and the minimum specifications that are required to achieve those outcomes. For the Weatherization Assistance Program, while we've had a mandate to provide cost-effective energy upgrade services to our clients, there's never been a consistent national yardstick against which to measure the quality of the work post-installation, and so this is what we hope to accomplish through this kind of work specifications. And today we will focus on what these look like for multifamily buildings. Next slide?

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So in 2009, our program got some attention, essentially because of the $5 billion we received through the Recovery Act, and with these funds we set aside about $140 million for the National Weatherization Training and Technical Assistance Plan that was designed to assist the network with training workers as they enter the program and then also to develop specific technical resources that will define the work of the weatherization and home energy upgrade industry and help ensure that the work is completed to the highest technical standards. The Recovery Act was always intended to be a bridge until the economy picked up, and for weatherization, I think as it is for most everyone, a key component of sustainability is market expansion.

And the work that we've been doing on multifamily to expand the suite of resources is a critical part of that. And so we're building these tools and weatherization, but we wanna make sure that they're integrated into other programs, including those that are within DOE, like the Better Buildings Neighborhood Program and Home Performance with Energy Star. And we've spent a lot of work connecting with our federal partners at HUD, USDA and EPA really to try to help develop a commonly agreed upon baseline for quality work in home energy upgrades so that these products will be useful to their programs as well. Next slide?

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Multifamily weatherization now represents well over a quarter of our total production. We were at around 256,000 units in June, and these numbers are beginning in January of 2009. Given how we've ramped up production, we have received a lot of feedback on needed multifamily tools and resources from the field. Next slide?

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And as a result, our program has done a lot to build the capacity in multifamily energy upgrades. First, the program understands fully the need for good data and good tools for evaluating risk. And the Recovery Act afforded us the opportunity to take a retrospective

look at our multifamily weatherization for our 2008 program year as well as a look at the Recovery Act period. As such, we're conducting a multifamily buildings analysis on both energy impacts as well as measures effectiveness. As part of this effort, we did a large multifamily building study that had many overlapping buildings with the Deutsche Bank Living City Study that was conducted in New York City. We anticipate that our national evaluation study results will be available starting in early 2013.

Since there is no universally accepted multifamily energy audit standard, we commissioned Oak Ridge National Laboratory to lead the development of technical guidelines for multifamily energy auditing, since the first step in a multifamily energy upgrade is the data gathering piece. And so with this effort, we are bringing together, like the Standard Work Specifications, multifamily experts from around the country to help us with this needed element for our program.

Second step in a multifamily energy upgrade process is performing the audit, and we brought together Oak Ridge National Laboratory along with Lawrence Berkeley National Laboratory to develop a multifamily tool for investment-grade energy audits. We held a series of national meetings that – where folks told us needed improvements for multifamily energy audit tools. And MulTEA, the Multifamily Tool for Energy Audits, was developed to help with some of the challenges of energy auditing, such as over-predicting energy savings and adjusting some other needs such as effective domestic hot water modeling and utility bill calibration innovations.

This tool is being developed two versions. The first version will address simpler low-rise buildings, four stories and less, and really we wanted to pay particular attention to that housing stock since we know that 70 to 80 percent of all multifamily buildings that have five or more units are in small buildings around the country. And Version 2 of the tool will address more complex systems and building higher rise buildings with central plant heating and cooling systems and more complex measures.

Finally, and what we're gonna be talking about today, is the Standard Work Specifications for Multifamily Energy Upgrades. They describe what an energy efficiency measure looks like when it's done right, and this is a means to help ensure quality work. And I think for investors and for folks that are working on multifamily buildings, both the MulTEA audit and the Standard Work Specifications help ensure that you know what you're investing in. Next slide.

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So I've been a federal employee for just a few short years, but one of the things I have heard from many of my DOE and other federal department colleagues is that during the past three years there has really been an unprecedented amount of collaboration between federal agencies. And I think the work that we've been doing with our other federal partners on the development of the Standard Work Specifications and the greater guidelines project is really indicative of that. EPA developed voluntary healthy indoor environment protocols for home energy upgrades for single-family homes and low-rise multifamily in coordination with our Guidelines for Home Energy Professionals Project.

They actually announced the release of the final protocols last November at our San Diego Weatherization Plus Health Conference. And EPA developed these protocols really to help provide practical guidance on improving or maintaining indoor air quality and indoor environments during home energy upgrades, retrofits or remodeling. And so for both of our agencies, we really wanted to help ensure that the majority of the EPA minimum actions that are in the Healthy Indoor Environment Protocols were incorporated into the Standard Work Specifications.

We're really happy to report that we've been working with the EPA Indoor Environments Division to help create healthy indoor environment protocols for multifamily energy upgrades, and really I think this further helps give multifamily buildings the attention that they deserve. We've also done a lot of work with our partners at HUD and USDA. They were actually involved in the development of the actual Standard Work Specifications, so we are hopeful that these will be adopted through their programs as well. Next slide?

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So in summary, I think if we're talking about the future of weatherization and home energy upgrade work, multifamily buildings is an important part of that market expansion. And if this is to be an industry, and if we are to realize the opportunity of millions of underperforming homes that feed into an economy of workers, manufacturers and trainers, then the industry must begin to speak with a unified voice. And our hope is that the Standard Work Specifications for Multifamily Upgrades will help provide important steps to help get us there.

So with that, I'm gonna turn it over to Dave Hepinstall, and he will provide us with a quick overview of the Multifamily Standard Work Specification Process.

Dave Hepinstall:
Thank you, Jennifer. So again, this is a very quick overview. First, I wanna just mention that in June of 2011, the market committee was established in cooperation with DOE and NREL in advanced energy, and we brought together experts from around the country to identify ultimately the process that we should go through to develop the Standard Work Specifications for Multifamily Buildings, recognizing that already we'd had a group that had been working on single-family standard work specifications and had produced a result that would be relevant for many multifamily buildings, particularly low-rise residential properties that have, for example, units with direct access to the outdoors with heating and cooling appliances within unit itself. Okay? So we wanted to build on this – the single-family work that had already been done.

We also looked at the midrise and high-rise and determined that the best way to take this on would be to identify the categories where work is taking place in buildings. You see the six categories of work that we're defining to become the basis for the subject matter experts who were recruited to work through a five-day development process that was held in North Carolina in July of 2011. The subject matter experts were organized into these six categories and worked nonstop throughout that week. Subsequently, the product that was developed from that convening of the subject matter experts had gone

through a review process in the fall of 2011, and what we're going – and the crew that was brought together is actually on the next page.

Okay – the multifamily one – move to the next page – next slide.

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This is the broad group of SMEs that were brought together in North Carolina in July, and following up from that there were a series of webinars to enable – I guess through eight webinars nationally to enable outsiders to be fully aware of what had taken place. Okay. And now we'll move to the next stage of describing what the Standard Work Specification Process for Multifamily by Nick.

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Nick Dirr:
Thanks, David. So the goal of the SWS is to define the work. And again, it's a detailed focus on specific energy efficiency retrofits in multifamilies. And the larger goal is to help define a national baseline for work quality, and in this context specifically the energy efficiency upgrades in a multifamily building. And so as you can kind of see in this picture, it's sort of just a representation of the level of detail that the Standard Work Specifications get into. But again, it's focused very much on the details that apply to that specific energy efficiency retrofit. Next slide, please.

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So as David mentioned, we actually have six different topic sections, and there's a seventh in terms of global health and safety. So the seven topic sections you would see in the Multifamily SWS is Global Health and Safety, Building Enclosure, Ventilation, Forced Air Heating and Cooling, Hydronic Heating, Water Heating and Conservation, and Baseload. The way that the actual specifications are organized is – and in the text portion of it, you're gonna see two things: a specification and an objective. So the objective defines the required outcome of the work, and the specification itself defines the minimum level of action required to meet that objective. And that's the organizational intent that you'll see within the specifications themselves. Next slide, please.

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So how are the SWSs intended to be used? The goal is to help energy auditors, program administrators and program managers better define and understand the necessary work involved in installing energy efficiency measures. And it's also intended to be used as a guide for onsite construction managers, building owner representatives and various program stakeholders in defining quality installation. This will help ensure that the energy savings are achieved as they were intended, and it will also help ensure that the safe – that the multifamily retrofit itself will have a safe and durable operation for the intended life of that measure. Next slide, please.

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So how will the SWS align with the existing codes? Well, first and foremost, the intention is that existing local code requirements and manufacturer requirements are

followed. So that's the main important thing, and we're not – the SWSs themselves aren't trying to replace those local requirements or manufacturers' requirements. However, there's a lot of examples where a multifamily retrofit doesn't have a particular code or standard that covers all components of that installation, so the Standard Work Specifications are trying to fill that gap in the industry.

And the draft SWS that you'll be able to review online has been reviewed already by code experts to ensure that the installation recommendations are not in conflict with international, universal or national codes. Next slide, please.

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How will the Standard Work Specifications be related to the existing trade? The SWS is not meant to replace existing industry codes, standards and practices. Again, it's intended to be complimentary and supplemental. The SWSs are intended to be used to provide guidance on installations specific to retrofit work not covered by the existing codes, specs and standards and to help energy auditors, program managers and others involved in the industry ensure that the appropriate codes, specs and standards are referenced when they're developing a scope of work for a particular project.

The Standard Work Specifications are not related to worker certification, so licensed and certified professionals will continue to work under their existing credentials for their trade. The Multifamily SWS is not intended to be used to develop a new installation worker certification.

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So like I mentioned earlier, a draft of Standard Work Specifications have been reviewed to ensure that they conform with the existing codes in the industry. And you can see the list there. I'm not gonna read through them, but the code reviewers are focusing on all of the major international uniform and national codes, both mechanical, plumbing, energy, building and the different – fuel, gas, electricity and oil. Next slide, please.

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And again, the draft Standard Work Specifications were also reviewed for conformance with industry standards, and the industry has provided a lot of useful feedback to make sure that the applicable code or standard is referenced in the specification text. So this includes ACCA Standard 5, the ACCA Manual J, D and S, ASHRAE Standard 111, ASHRAE 62.2 and 62.1 as well as ASHRAE 90.1.

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After your comments are input into the tool, and Chuck's gonna go through how you can do that, the review process looks at each of those comments and either accepts them, which means that they are accepted as recommended, and the comment will be integrated into the text, or they are accepted with modifications, which means that the comment that – the reviewer agreed with the intent of the comment; however, they made a modification to the recommended change – or that they were rejected. So the recommended change was not incorporated. And you'll be able to see the response in the tool to your comment to see why it was not incorporated into the final specification text.

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So what I wanna go through quickly is sort of the methodology for integrating the various codes and standards into the draft Standard Work Specifications to date. And as I mentioned earlier, the primary specification is for installers to follow the local code requirements and the manufacturers' requirements. And as it mentioned in a lot of international codes, if there is a conflict between the two, generally the more stringent requirement should be followed. But note the specific local codes throughout the country haven't been reviewed to check with conformance with the Standard Work Specifications. The main review was done on the international, universal and national codes.

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I know this kind of reads like radio installation instructions, and we'll go through an example in a minute. But the next step that was taken in the generation of the specifications was, (a) if there is a nationally or internationally recognized code or standard that should be followed in absence of a specific local code or manufacturer requirement this was included specifically in the text language. And so that includes then NFPA 54 and NFPA 70, International Fuel Gas Code, etc. Additionally, if the local code or manufacturer does not have a requirement for that specification and there is an industry-recognized standard that should be followed, it was directly included in the text of the specification. And this includes the ACCA Equipment Sizing Standards, ACCA Standard 5, ASHRAE Standard 111, amongst others. Next slide, please.

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And then complementary standards that either closely matched the language already in the SWS or were more general in nature were included in a cross reference appendix. And that's just a quick snapshot of that appendix there, but we'll go through that in more detail here when we go through an SWS example. So Chuck, if you could pull up the PDF of the SWS example, that'd be great.

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So the example we're gonna go through now, you can see there the topic is in the Hydronic Heating, Hot Water section. The subtopic is "Boiler," and the detail name is "Replacement with a Hot Water Boiler," and the desired outcome is the proper installation and operation of a new boiler. And you'll see the same formatting for every detail throughout the document. So the way it's formatted, again, that each row is a subcomponent of the specific detail. So 5.1.1 is "Assessment." And like I mentioned earlier, you'll see both the specification and the objectives.

So the objective is for the installer to verify the scope of work. And in order for them to verify the scope of work, they need to make sure that they confirm the following subcomponents in that particular example. So clearances, proper drainage in the boiler room, flue and chimney conditions, etc. So the next subcomponent you see – go one – well, just go up a little bit further – 5.1.2 is again the boiler sizing calculation. So this is an example of the specification saying that heat load calculations will need to be confirmed with one of the following methods: ACCA Manual J, Manual N or an

ASHRAE equivalent such as ASHRAE Standard 183. So that's an example of you'll see a standard directly referenced within the text of the specification.

As you go down you can see there's a lot of details covered within the SWS. We have low mass boiler should be preferenced. Multiple boilers in sequencing – you know, a control package should be used for _____ _____ sequencing capabilities. Again, these are a lot of the things that you don't specifically see in an existing code or standard. And again, what the Standard Work Specification is trying to fill that gap that you would typically see in the industry, particularly what we've seen for different scopes of work generated _____ _____.

Again, it goes through all these details – fuel switching, hazardous materials removal, decommissioning of the existing system, and then new equipment installation. And again, here's a good example of both referencing existing industry standards. So the new boiler and associated components should be installed with compliance with ACCA Standard 5 as well as local mechanical codes. The concrete pads should be installed in accordance with Uniform Mechanical Code. All operating safety controls should be set up with local code and manufacturers' requirements. But then you also see some details that you typically might not see in some of those documents.

So that a water meter should be installed on the makeup water line coming into the boiler, and an isolation valve should be installed to allow for pressure testing of the boiler. And again, we can just kind of scroll through the rest. I just wanna give everyone in the audience an example to see everything that's in these particular specifications. So flushing a system, startup and skimming of the boiler, the location of the circulator, air separator, water expansion tank, and finally education. So when the group sat down to discuss a particular detail, they tried to think of all the different components that would need to be followed in order for it to be an installation that, again, achieved the intended energy efficiency opportunities as well as operated in a safe and durable manner.

The final thing I wanted to show you guys here is again that cross reference. So this is just a one-page example. But the cross reference document for the various codes and standards – there's two different versions of it. So one is organized by the detail name. So it'll show you for each specific detail which codes or standards are referenced within that detail, and then go to the next example please – next page. And then it also will be organized by the specific code and standard and will highlight which specification references that particular code and standard.

And all of these documents are available on the online tool, which Chuck is going to walk you through now.

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Chuck Kurnik:
Okay, thanks for that, Nick. I'm gonna get us back into our slideshow here. Yeah – okay.

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Okay – and so actually I'm not sure why I did that because we're gonna go right back out and do a live demo. So this is the landing page, and so this is what it's gonna look like when you go to this URL below – this NREL.PNNL.gov.

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And I've got that queued up here. So this site – I need to move this someplace else. That's not working. So this is the landing page – actually, this is not the landing page. This is the landing page here that you'll see when you go to that NREL.PNNL.gov URL.

And so it works best with Firefox or Chrome, but if you have to use Internet Explorer we suggest that you install the plug-in Google Chrome Frame. And so you can see here there's a little bit of text around that, and so when you try to – when you open it up in Internet Explorer, you'll see this Google Chrome Frame it will try to install. So we recommend that you install that because we just had a lot of trouble with the speed of response using Internet Explorer.

One of the other announcements you'll see up here is this how-to video, and so essentially what I'm gonna be doing is going through this how-to video right now, but just as a live demonstration. And so if you – if part of this doesn't make sense or you want a refresher, you can go back to this how-to video. And so if you haven't used this site before, you'll need to register. And so you can click on this link up here to register, and what'll happen is that once you register it'll send an email to the email account that you've attached your registration to, and you'll have to click on a link to activate your registration.

And so once you are registered you can log in. So it should be logging in for me here. Maybe it's not. Okay. I must have had the wrong password there. And so you'll see that you're logged in now. You can see that it's welcoming me, NREL Commenter. And so once you're logged in you can go click on the Standard Work Specifications for Multifamily Homes. And so we call each of these a forum. And so there aren't – there are no comment periods open for single-family or for manufactured housing, but if you notice here for multifamily it closes on – this comment period closes on December 21, 2012.

So we'll click on that, and so what I would suggest – before leaving comments, what I would suggest you do is to look at the PDF of the SWS for Multifamily Homes. And so you can find that on this line right here, SWS for Multifamily Homes. And so from here, if you scroll down a little bit, you'll see the link to the PDF; you see the little Adobe icon there. You can click on that. And so we can see it's downloading here. And so this should look familiar. It should look really familiar to what Nick had left – or what Nick showed us earlier.

And so you – it's just a lot easier to read in this version – in the PDF version as opposed to trying to read it on the commenting tool. So you can see here that we've got our title block and then each of our rows. We call each of the rows – we call that a specification. And so you can look here – so let's just follow this example through. So we've got Global Worker Safety 1.1, and then we'll look at row 1.1.1 within the commenting tool.

So if we go back to the commenting tool – and you can notice up at the top here – I don't know if you can see this, but it opened up the section in a different window. So we can close this window, and it'll take us back to this section here. We click on Section 1; you can see that it's showing us all of the Standard Work Specifications within Section 1. We click on this. This just gives us the title block, as we saw last time. And again, that's opened in a separate window. You can just close that. It'll save your spot here.

And if you want to comment on a particular detail, you would click on that detail, and you'll see here that it's got this detail. It's got the specification and the objective. And so if you wanna leave a comment on this, you click on "Submit Comments." In "Subsection," you'll enter this number up here: 1.1.1. That's one of the ways that we use to keep track of what comments were left on what sections. And then – I spelled that wrong, but you get the idea.

And so here you can use – you can see these text editing tools, so if you wanted to bold or italicize or underline anything you could just do that right here. You'll notice that it leaves some tags, but be assured that when the reviewers go and look through the comments, they'll see that in bold. You can scroll down farther. If you have any attachments – say you wanted to attach a copy of a particular page from a code book or a standard, you could leave that right down here. You click on "Manage Attachments," choose a file from your hard drive and then upload that file here, and then you can just close the window.

And then once you've done that you can just submit your comment here. And if you wanna come back later to this website – so let's say we've – well, let's start from here. Let's say we've gone back. You can click on SWS for Multifamily Homes, and then notice up here this – in this menu bar – the brown menu bar, "Track My Comments," you can click on that, and what that'll give you is a list of the comments that you've left and then what the status is. Right now they're just submitted. After they've been addressed, they'll have one of the three options that Nick had mentioned: accept, accept with modifications or rejected.

And then there'll also be another block over here that gives the formal – the team's response to why a comment was accepted or rejected or accepted with modifications. And if it was accepted, there may not be any explanation. It might just be that we accepted your comment as is. If we changed it, we'll explain what we changed and what we accepted about the comment. And if it was rejected we'll provide a response of – we'll provide a reason for why we rejected it. And so that's all I had for this demo here.

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So now I think we can go back to this. And I think we've got a couple of – maybe one or two last concluding slides.

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So yeah, this is the last slide. So resources and questions – and I just wanted to give a couple of logistical pieces here. One is that we will have a copy of this – a recorded

version of this webinar and the slide deck available after the webinar. And once we get that done, completed and online, we will email folks with where to find that.

And we also had a question about a schedule, and so what we're – what we're planning for the schedule is that this final review will be closing on December 21. We'll review the comments and run it through an editing process and a formatting process, and we're planning to have the PDF version of the Multifamily Standard Work Specifications available early – late spring, early summer. And that's I think the conclusion of the webinar.

So we have a few questions here that we'd like to go through. And so this one I think is for Jen. And so what we have is, "Please comment on when the various tools mentioned will become available." So the Standard Work Specifications, I mentioned that those will be available – for multifamily will be available this summer of 2013. And then the other tools that the listener is interested in is MulTEA and the EPA Multifamily Indoor Air Standards.

Jen Somers:
Okay – so for the MulTEA tool – the Multifamily Tool for Energy Audits – Version 1 of the tool will be available probably around February of next year, and the second version of the tool, which will incorporate elements of Version 1 into Version 2 – it'll be the whole thing – that will be available probably in September of 2013. For the Healthy Indoor Environment Protocols, that is an EPA-led project. I know that there is an initial very first draft that is currently in the works and being discussed between the different federal agencies. That I don't imagine will be available until sometime probably summer of next year. And then for the Technical Guidelines for Multifamily Energy Auditing, those will be available in the spring – in the April timeframe.

Chuck Kurnik:
Okay – great. Thanks for that, Jen. And we have another question here. "Have the SWSs for Multifamily been published? And if so, where are they available?"

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So the most recent draft version that we have available is online, as I was showing, in this comment tool. So again, if you go up to the Multifamily Homes, you can download the PDF from within this website. And we actually don't have any other questions right now. So is there –

Okay, one just came in. "Is there a sign-up list to keep informed about all the tools?" So for this project, we do have a sign-up list for the Standard Work Specification, but I'm not aware of a sign-up list for the MulTEA tool. Jen, do you have any – do you know if there's a sign-up list for that?

Jen Somers:
Sure – so we have – we actually have on our FAQ sheet – we do have a Multifamily email address that folks if they have questions can send questions to that email address.

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We have kind of an ad hoc technical advisory group that we've formed that does contain email addresses for a number of folks who have expressed interest in the MulTEA tool. If folks are interested, they can email that Multifamily web address – and I will see if I can pull this up.

Chuck Kurnik:
Yeah – and what you can – what folks can do is they can email this WorkforceGuidelines@NREL.gov, and if it's something that we can answer, and if it relates to that MulTEA, we can pass that along.

Jen Somers:
Right. The other – right, and actually if they just wanna put in the subject line "Multifamily," then we can be sure that we respond to them.

Chuck Kurnik:
Okay – great. Okay – we've got another question here. "How does this effort include or relate to the License Trade/Apprenticeship Programs and Training Pathways?" So I think, Josh, that might be one for you. And I can repeat the question if you'd like.

Josh:
No, I think I got it. So it doesn't directly relate. It's not an integrated effort. It's a – these are meant to be resources that can certainly be picked up and used by industry generally speaking. So the License Trade/Apprenticeship Programs are – you know, is one of those things they may want to base some of their content on or may want to base their educational learning objectives around. And so most of the folks who use it outside of Weatherization Program sort of build their curricula around the idea that these kind of work specifications are part of that overall effort. But it's not an integrated effort right now, although we have sort of incorporated the _____ building _____ into the work and sort of had them in the process of reviewing the documents.

Chuck Kurnik:
Okay – thanks for that, Josh. We have another question here. "Are these workforce standards also intended to be used for low-income housing tax credit projects completing renovations on existing properties.

Jen Somers:
I can take this one. So yes, I think the – a big part of the reason that we have been involving our federal partners as well as folks that are involved in the affordable housing community is so that folks can be using the Standard Work Specifications as a benchmark. So anyone that's performing a multifamily energy upgrade job, whether it's through low-income housing tax credits projects that might have reached the end of their 15-year period, and they're looking to do an upgrade to the property, absolutely, that's the intent of these. And we've been involving, again, all of these various entities so that they have been involved in the development process, and so that they can also incorporate these into their programs.

Chuck Kurnik:

Okay – this is – this looks like all the questions that we have. And so what I'd like to do is just thank everyone for joining us today, and I hope that this provided a good update to you all. So thank you again for your time. And we'll be ending the webinar now. And again, you can see the resources, so please feel free to contact us at these contact – at this email address. So have a good Thanksgiving, everyone. We'll see you all later.

Jen Somers:
Thank you.

[End of Audio]