NATIONAL INSTITUTE FOR

OCCUPATIONAL SAFETY AND HEALTH

NATIONAL PERSONAL PROTECTIVE TECHNOLOGY LABORATORIES

PUBLIC MEETING TO DISCUSS NIOSH's

RESPIRATOR STANDARDS DEVELOPMENT EFFORTS

ORIGINAL

Thursday, December 9, 2010

Commencing at 8:34 a.m. at the Hyatt Regency Pittsburgh International Airport, 1111 Airport Boulevard, Pittsburgh, PA 15231.

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

MR. BOORD: If everybody wants to take a seat, we'll begin.

Okay. Well, I'd like to welcome everyone to the National Personal Protective Technology public meeting to discuss respirator standards development efforts.

For those of you who don't know me, my name is Les Boord. I am the Director for the Laboratory, and again we welcome you here to this meeting.

And you know last week -- well, the topic of the meeting is, obviously, Personal Protective Technologies and Personal Protective Equipment.

Last week, there was a meeting on personal protective equipment sponsored by the technical support working group. And the meeting had a very, very good agenda. And it was in Fort Lauderdale, Florida, where I think the temperatures were a little more friendly than they are here today in Pittsburgh.

So we certainly commend all of you for weathering the storm to make it to Pittsburgh for this pleasant weather that we have in mid-December for this

meeting.

The agenda that we have today, it must be a good agenda, because we have very good attendance. And I was telling John, John Kuhn, a little bit earlier it must be the agenda or we're giving away a door prize, and I'm not sure what it is. But we really have a nice turnout in attendance. So thank you for coming.

But the agenda will cover three topical areas relative to have our standards and regulation development in the laboratory and for the institute.

And those three topical areas are addressing the overall process that we develop our standards to introduce into the regulatory world. A secondary discussion will be combination type respirators, self-contained breathing apparatus, air-purifying system, supplied air all working together in combination. And then thirdly, an issue -- a topical issue that has high interest, which is the concept of buddy-breathing in relationship to self-contained breathing apparatus.

So I think we really have -- have really

three good invigorating topics to discuss today and to gain your insights and perspectives on these topics in these areas.

But I think in addition to those and the topics that we're talking about relative to PPE and respirator standards, I think the meeting also has some other innovation that will be unfolded today as the day progresses. And I think it's relative to meeting technology.

And we have a number of different avenues to extend the reach of our meeting to other participants who would not be able to visit the -- and participate firsthand in the meeting. So we have LiveMeeting activities set up to conduct today.

And I think we also have the ability to do Twitter and Facebook. I'm not sure exactly what that is, but I think we have that capability and it's a new step in a new direction for these types of meetings.

And again, our interest in doing that is really to extend the reach, so that we can really reach out and be able to share information and receive information from a wide array of stakeholders and

participants.

And so with that again -- again, we welcome you and I'd like to turn the meeting over to Mr. Jon Szalajda who has very diligently put together an agenda, planned today's activities, and organized the meeting.

Jon is the Branch Chief for our Policy and Standards Development Activities in the laboratory. So his area and under Jon's direction, the regulation concept technology development and the rulemaking activities are managed and directed. So with that, I'd like to turn the meeting over to Jon.

MR. SZALAJDA: Thank you, Les.

Just one -- John, before we start if I turn this chat box off, will that be a problem?

MR. PERROTTE: I don't know why that stuff is on there.

MR. SZALAJDA: All right. There, that's much nicer.

Good morning, and I'm very happy to see such a large turnout for our discussions today.

One of the things that I wanted to bring to

your attention -- at least for us doing public meetings going forward -- were we're trying to be a little greener with regard to the amount paper, paper that we generate. So the approach that we took for this meeting was to put all of our NIOSH presentations on the Internet prior to the meeting, and hopefully that some of you had an opportunity to look at those before we came today. But you'll note that the only paper that you're going to get from us today is going to be the survey for what you thought about the meeting.

I had a couple of housekeeping things to address. One, if there is a fire in the building today, there are various exits from this room along the side, out the back. If you exit to the left, you head out towards the parking lot of the hotel. If you exit to the right, it takes you out towards the moving walkway and to the airport itself.

For restrooms, they're in this hallway to my left. If you go out the back door and make a left, they're on both the right and left side.

In addition to dining within the hotel and

also at the restaurants right before -- right by security at the airport, the hotel is going to offer a box lunch today, roughly around 12:30. I hopefully will be at that point to break for lunch around 12, 12:30, cash only. It's $12. I don't know what the selection is, you know. Hopefully, it will be a pleasant surprise.

The evaluations, our survey are going to be distributed at lunch. If you are going to be leaving early, if you could complete those surveys before you leave, and leave them with Charlene outside the back of the room.

And there is also going to be coffee and pastries; and this afternoon will be coffee and cookies in the hallway here to my left.

And what I'd like to -- at least bring everyone up to speed. The way we're going to conduct the meeting today is as -- actually, from our perspective, it's three different meetings.

One is going to be the discussion of what we envision as our Regulatory Agenda for Respiratory Protective Devices. We're also going to have a

discussion regarding CBRN Combination Respirator Units. And we're also going to have a discussion on the SCBA emergency escape support breathing system, or otherwise known as the buddy-breather.

We have several presentation guest presenters who will be making presentations during the Combination Respirator Unit topic, as well as the buddy-breathing topic.

One of those will be done using LiveMeeting, which should be an interesting treat for us. But we'll see how that works out. And again, it's a learning experience for us and we'll hope that you bear with us as we move along.

These are the areas on the NIOSH docket where we placed information regarding the topics for today's meeting. As I had mentioned, the presentations that NIOSH is delivering are available now on the site and they've been up, I think, for about a week, week to 10 days, on the docket.

We have been receiving some docket comments already with regard to the information that was posted to the Internet. And what I would encourage you to do

is after the meeting to periodically check the docket for the inclusion of new information.

The presentations that we'll hear today with regard to the Combination Respirator Unit and buddy-breathing will be placed in the docket within the next couple of weeks. The transcript for this meeting will also be placed in the docket upon its completion.

So why are we here today, other than I thought it was a good idea to have the meeting in Pittsburgh in December?

But, one, we wanted to -- part of what we're trying to do is to share information with our stakeholders with regard to things that we're working on, as well as things that you feel are important for us to address, and with regard to our projects, our programs, and how we do business.

And it also provides -- this meeting also provides a forum for you, the stakeholder, to give us feedback with regard to the work that we're doing.

So with our meeting format, it's a combination of presentations and discussion. What I

would like to try to do as we move through the presentations is if you can limit your questions following each of the presentations, because we've built in a panel discussion opportunity at the end of each of the sessions where the different presenters and NIOSH can interact with you with regard to topics that we've selected that we're looking for particular feedback with regard to each of the areas that we're discussing today.

And as Les had mentioned, we are using LiveMeeting access. So from that standpoint, what we'll need to do for the people that are participating via LiveMeeting, we need to use the microphone so that will allow them to hear the discussion that's going on.

And this was a big step for us, at least in terms of pursuing social media. And for the future -- future reference that these are the two links that NIOSH is currently using with regard to how we can put little snippets of information out on Twitter and also on Facebook.

And I think, you know, for people my age

that if you look at your kids, you know, they probably know exactly what this is, how to manipulate it, how to input things. And for me it's a strange -- strange and scary new world. But part of what we're trying to do, as Les had mentioned, with using this type of media is to outreach to people that you wouldn't think of would come to these public meetings, you know, because of time or other activities that they're involved with. They're used to getting their information a different way, and that's through short bursts. And our foray into using this social media is an attempt to try to reach that potential audience.

And part of the discussion that we'll have today is we'll also try to incorporate any feedback that we get from either Twitter or Facebook as part of our discussions.

If you haven't registered for the meeting already, I'd encourage you to do so. I know some people snuck in the side doors. But we like to capture your participation in the meeting. And if you could register with Charlene at your convenience during the course of the day, I would appreciate that.

As I had mentioned, everything is being recorded. The meeting will be transcribed and the products of the transcription will be available in all three dockets.

We're going to do our presentations in accordance with the agenda. And the flexibility that I hope to use today is I want to start -- the start times, I think, need to be fixed, especially in relation to our LiveMeeting participants.

So at 10:15, we're going to move into the Combination Respirator Unit discussions. At 1:30 this afternoon, we're going to move into buddy-breathing. I'd like to try to maintain a little bit of flexibility based on how the discussions are going to introduce breaks to allow us to stretch our legs and get away from PowerPoint for a little bit.

I mentioned the survey. You know, please complete that. It's a good tool for us to get feedback that whether or not our meeting -- this format is meeting your needs with regard to information exchanged.

And as I had mentioned with the discussion,

the way we're going to conduct the meeting is there will be several presentations. At the end of the presentations, we'll take a short number of questions. We'll go in order from the participants here in the room, then we'll go to LiveMeeting, and then we'll see if we get anything with regard to the social media. And we'll do that for each topic as we go through.

Also if you're interested in making a presentation and you haven't notified us already, if you could see Charlene in the back and we will work to accommodate your request for making a presentation during the course of the meeting.

I also wanted to mention at this session that we have an upcoming program stakeholder meeting in March, for March 29th, will be conducted in this facility. And it's -- the focus on this meeting is going to be primarily in four of our sector areas: Health care, mining, agriculture, and public safety. And also Gordon Graham will be the keynote speaker. And if you've had the opportunity to hear Mr. Graham speak, he's very entertaining but also very topical. And I encourage you to track information regarding the

PPT Stakeholder Meeting through our website.

And so with that, I need to give you the obligatory NIOSH disclaimer that our discussions shouldn't be construed by -- to reflect NIOSH policy unless you see other documents that say it's NIOSH policy.

And I left this slide up for Les. And I think it was a point that -- and we changed our agenda a little bit. But I wanted to at least mention my perspective on the vision and mission. And I had mentioned this last week at the TSWG Conference. And I think when you look at the completion of the mission of the PPT program, it's not just NPPTL. It's all of us. It's the stakeholders who have an interest in personal protective technology that forward the mission. I mean NPPTL can only do so much because of, you know, our resource limitations.

But you know, one of the things I think is important for us in moving forward is to be able to leverage things that are being done in the community and bring that into focus to protect worker safety and health.

And so with that, the overview is complete.

Any questions with regard to the conduct of the meeting?

No? John, anything from LiveMeeting?

MR. PERROTTE: No.

MR. SZALAJDA: Anything on social media?

No. Okay.

All right. Then we'll begin the regulatory agenda part of the meeting.

And John, I'll need the slides.

At least with regard to what I would like to try to accomplish today, one of the things that you may have seen in the news and discussions that have gone forward in the media and other places is a recognition or reinforcement of the need for the government to conduct its business in a transparent fashion. And it's like, well, what does that mean?

And I think from a standpoint, at least within our organization, you know, we try to focus and encourage public participation with what we do. And since the establishment of NPPTL, we have conducted several public meetings over the years to discuss

various performance concepts for respiratory protection.

We've conducted program meetings for Personal Protective Technology to share information. And I think with this topic today, part of what I wanted to do is share some of the lessons that we learned in rulemaking, and some of them have been hard lessons.

And I think for a variety of reasons that I'm not going to go into detail about, but I think in moving forward I want to try to take advantage and share some of the lessons that we have learned with regard to the process and the products that we are generating to update the Code of Federal Regulations and also to increase stakeholder awareness with regard to how you can participate in the process, as well as, you know, increase awareness with regard to what certain things mean.

And the longer that I've been with NIOSH, the more important it's been for me to recognize and define common terms and define frames of reference that we all can use in terms of moving forward with

different projects.

So the first part of the presentation covers the rules for the road, which is going to give you a 10,000 foot view of rulemaking. And I know at least with my branch, I got to say at times I paint with a roller or a six-inch brush instead of using a fine brush, you know, with regard to topics. But I think at least in terms of setting the agenda, the finest, the detail comes along as we move and identify and establish various products -- you know, various regulatory products as we move through the agenda.

The path forward that I'm going to share is at least our three-year view of what we think is going to transpose in the industry. Part of that is a spin-off of a briefing that we gave Dr. Howard, NIOSH Director, a few months ago with regard to what we thought the regulatory agenda should be for NPPTL and for NIOSH with regard to respirators.

And what Dr. Howard's suggestion was, was that we look at not just the three-year program, but the five-year program. And in looking at the -- at trying to establish a five-year program, it was

apparent to me that what I needed to do was conduct this meeting and to get feedback from stakeholders such as yourselves to help us determine the types of things that we need to be working on. And it will also be an opportunity for comments and questions at the end of the presentation.

It's interesting, you know, as part of any meeting you do a certain amount of preparation and try to identify sources and things that you can use to further your discussion. And with regard to this topic on the Internet in a magazine called "Inside EHS Today," I found an article that was generated by a fellow name William Harris, who I believe works for 3M. And if was entitled how regulation innovation have shaped respiratory protection. And I found it to be a very interesting article from the perspective that it gave a history of why respiratory protection regulations exist as well as different things that have happened over the years that cause changes to the regulation.

You know, the one thing to keep in mind is with the development of a regulation is that Congress

sets the statute. Congress sets the law. You know, in our case, the Mine, Safety and Health Act and OSHA Acts identify the need to use NIOSH approved respiratory protective devices if they were required in the work place.

And it's interesting that when you look back at the history, that was 1970; '70, '72 time frame when that happened. But when you go back and look at the predecessor regulations 30 CFR Part 11 and then even other regulations that go further back, that things were -- regulations were implemented as a result of a tragedy, you know.

And I think in particular with the respiratory protection regulations you look back and there is a huge industrial accident in West Virginia, where almost 500 workers died because of exposure to silica and 1500 workers remain ill because of the exposure, and now it's because of a lack of standards -- a lack of respiratory protection standards and the use in the work force.

So I think we can all recognize and appreciate that. Even though while

Congress sets the statute, the regulations add the technology and the economic and the industrial expertise that needs to be necessary to define what performance requirements should be for respirators.

So when you look at the rulemaking process, the rules for us are governed by the Administration Procedure Act. And as far as the deformation of a rule, for either the APA, it's fairly straightforward. But really the common purposes are that it adds scientific expertise. You know, the law may say they be very -- it's like the Jon Szalajda perspective in the Broad Brush, and they say a very general statement that he need respiratory protection. But the law won't go into the detail as far as, you know, what that respiratory protection should be.

So the regulations can add scientific expertise. It can also add implementation detail, at least with regard to how the statute, how the law should be implemented. It also theoretically adds flexibility. And by that I mean that regulations should be easier to change than changing the law.

And even though that necessarily hasn't been

our experience to date, in theory it should be easier to change a regulation because it's not statute than it would be otherwise.

And then also another purpose of rulemaking is to be able to find compromise, you know with regard to if you're dealing with a very sensitive subject that the implementation of the law, you know, might be able to find a way to address the concerns of all the parties.

Rulemaking is basically the process for formulating, amending, or repealing a rule. I think what's a very important feature of the process is that the public gets a 30-day window, or a minimum of a 30-day window for our implementation. And that gives an opportunity that if there are issues with the public or interested parties with regard to the content of rule, it gives them an opportunity to state their objection before it's codified and put into the federal rule, the Code of Federal Regulations

I wanted to mention as the main point for this slide that part of what we do within NIOSH is maintain a docket, an information docket which

includes all of the information that we use in the development of the performance requirements and other aspects of the regulation, proposed regulation.

There's -- actually for us, and it was something that we learned along the way, there's two means of doing that. One is a submittal to our docket, the NIOSH office. And during the course of the day, you'll see slides which indicate make your submittal either by e-mail or mail or other mechanisms to the docket office, and it will give you a number.

The government's docket is regulations.gov and part of what we had to do with regard to things that we have in the rulemaking process is establish a link between the NIOSH docket and regulations.gov.

I think if you're familiar with some of the things that we've done in recent years that we've created what NIOSH calls Information Dockets, you know, for meetings such as today where we start accumulating information with regard to our current thoughts on any particular subject.

Those Information Dockets all become part of the record and part of our deliberations. When we get

to the actual Rulemaking phase, then you'll see that link with regulations.gov and there will be a sharing of information between the contents of what's in those two dockets.

But the one thing to keep in mind with the docket also, it's publicly accessible. So anything that you would submit to the docket will become part of the permanent record. So we encourage people not to submit things that may be company confidential or personal in nature with regard to the information that's submitted.

And as I had mentioned, once the regulation is published and takes effect, then that's what's called a final rule. And then you'll see something on this NIOSH website that the rule has been finalized, and it will be published in the Federal Register

Another aspect that you should be aware of that we need to consider with regard to our activities is Executive Order 12866, which was implemented during the Clinton Administration. And part of that is there's a list of regulatory activities that we need to conduct internally as part of the rulemaking

process.

Some of significant ones that are identified are that we have to do an assessment if there's an annual effect on the economy of a hundred million dollars or more with regard to the implementation of the rule. We also have to do an assessment with whether or not our proposed regulation interferes with any of the other actions planned by other federal agencies. And we also have to do an assessment of whether the implementation of this rule raises a novel legal or policy issues with regard to how the government does business.

If we determine that the rule is economically significant, if it meets that hundred million dollar threshold, we have to do a process, which is cost benefit analysis, and that is work with an organization called "OIRA," which I believe is the Office of Internal and Regulatory Affairs as part of OMB. And they review this cost benefit assessment with regard to the implementation of the rule to make sure that, you know, our assessment is accurate and the findings that we are issuing in the rule are

appropriate.

There's also analysis requirements as part of the executive order to do things like the Regulatory Flexibility Act, the Paperwork Reduction Act. There's a list of several things that we need to consider with regard to the rulemaking process. And that when you see the actual development of the rule, you'll see categories of the rule which address those particular analyses that need to be completed.

In doing the -- in assembling this presentation, there are several links on the OMB website, which if you are interested in the process and how OMB looks at the perspective, that can provide you some insights as well. There's also -- I didn't include this link from the American Bar Association, but I probably will make that part of the docket if you are interested. That gives a very good synopsis of the process as well.

Another aspect of the executive order also requires regulatory agencies to submit their plan. And NIOSH's formal approach to submitting the plan is identified in the unified agenda, which is available

on the NIOSH website. And that will tell you what our anticipated regulatory activities are over the upcoming year.

Just as an aside, there are a couple of seats. If you guys want to sit, there's a couple seats located up here towards the front and other spots, because I could be long-winded.

The process that NIOSH uses with regard to the rulemaking process is called informal rulemaking. And another way it's been termed is also notice and comment rulemaking.

The APA in one section sets forth and makes a distinction between formal rulemaking requirements and informal rulemaking requirements. And I think that -- I'm not a lawyer. But the bottom line to me was formal requirements are things where you involve the courts. You know, it's a trial type procedure with regard to the rulemaking activities.

The informal, the notice and comment period, or the notice and comment types of rulemaking are more geared toward agencies allowing and creating the opportunities for public participation with

rulemaking.

These are some of the tools you may see us use going forward with regard to the rulemaking process. The one is Advance Notice of Proposed Rulemaking. And from that standpoint what this does is it basically puts the community on notice that we are developing a regulation to change the -- Part 84 to change the standard.

And what's nice about the advance notice is it's very technical in nature that it focuses on what we think the performance requirements are and other technical requirements are associated with the particular topic that we're trying to address. It doesn't include the regulatory language. It doesn't include the regulatory flexibility act analysis and those types of parameters.

Another couple of types of formal rulemaking are interim final rule and direct final rule. And I was trying to think of an example of where we could have used an interim final rule in the past. And if you're familiar with the CBRN respirator program, we use provisions in Part 84 which allowed us to identify

performance criteria for those types of respirators and we implemented that using policy.

But if we had been forced to go into the rulemaking process, we could have used an interim final rule, which would have allowed us to issue the rule and then accept comments on it after it was issued. And I think if you would recall at the time frame when the CBRN standards first started out, this was post 911 and there was a sense of urgency to issue and have these protections available and equipment for the responder community.

You know, in hindsight in looking back, had we not had the policy provisions in place in order to be able to meet that emergency requirement, we could have gone and used an interim final rule. So with the advance notice, these are the types of things that you would see from us when that comes forward.

We may or may not conduct public meetings. I think it's in our best interest to be able to share the information as part of trying to be transparent and share information with the stakeholders. It's in our best interest to share with you the results of any

research that we may have done, as well as allow the stakeholder community to share information with us as well.

And I think the one thing that's nice about the advance notice is it's -- I hate to use the term "formalize the informal process," but it does put the community on notice that we are working on something and we are seriously identifying technical requirements to go and use to update a regulation.

So a couple of the features of the Notice of Proposed Rulemaking, as well as final rule, and at least for us we've had three NPRMs in the past three years with the closed-circuit escape respirator, the quality assurance provisions, and the total inward leakage program for half-mask and filtering facepiece respirators. But if you go back and you look at those as products, they contain all these items that -- you know, and I think it focuses on the bases of the rule and then discusses the impacts.

And I think one of the things that we've learned, you know, with regard to the NPRMs is that -- which has had -- excuse me -- had us look seriously in

the advance notices that we always got requests for extensions and that we need more time, you know, to do -- to develop data. We need more time to assess the products.

And my hope is with the introduction of the advance notice of propose rulemaking that that will give the community an opportunity to address these types of things before we get to the Notice of Proposed Rule phase.

And then the final rule, basically that's in the finalization of the document, the finalization of the regulatory text which goes into the Code of Federal Regulations, which is ultimately published. It specifies an effective date and a minimum of 30 days after the publication. It could be longer. And that's up to the discretion of the agency.

It also addresses -- you know, part of the requirements are to address our requirements. In developing the information is to address public comments. And while we may not address every comment specifically and individually, we do at least anecdotally address all the comments. And it is part

of -- that deliberation is part of our process in the finalization of the rule.

So again, to me, the big point of the whole process is transparency and giving the community an opportunity to participate in the process. And as for the public, the public meeting options come into play. And we have done that with the different rules that we've proposed so far and will continue to do that with rules that we are developing here over the next several years.

And the final rule. I's -- I would imagine if I were on the manufacturer's side and some of the stakeholders' side of the fence, you wonder what happens behind the curtain. And I'm kind of reminded of the Wizard of Oz, you know, pay no attention to that man behind the curtain. But there are, even though things may disappear from your view, there is still activity that's occurring behind the scenes that you're not necessarily seeing with regard to how the rules are being finalized and moving through.

And there are several things that need to be done. And I think the big thing to me is the last

bullet, which is the agency department and the executive department clearance, and that takes time.

And from the time that we do our due diligence within NPPTL, the institute does its due diligence with regard to the content of the rule. CDC does its due diligence. The Department of Health and Human Services does its diligence. This all takes time.

And for the most part agencies do not have defined time frames to keep the rule moving. And so we do what we can, you know, working with the staff that supports us on these activities to help keep these things moving along.

Now, when you get to the end of the cycle and you get to OMB, OMB does have a clock, you know. It's with regard to reviewing the administration, and it's and reviewing the evolution of the rule. And the clock is either 45 days or 90 days, from what I can tell out of the information I've reviewed.

The 45 days is basically if there's no substantial changes to the supporting information, no substantial changes to the economic analyses and the

regulatory flexibility act analyses and those types of things. Now, don't quote me on that because it's my interpretation of what I read. But you know, just the key point is to keep in mind that once we get through the departmental clearance, then there is a clock. And then from that standpoint you're looking at probably no more than 90 days before the rule is published.

So that kind of covers the rules of the road. You know -- and again, I think -- and I welcome any comments or dialogue that you'd like to have with regard to this perspective, but I felt it was important to at least give you the thousand foot level of rulemaking. In hindsight, there's a CDC attorney name James Holt that we've worked with in the past, and he does an excellent presentation with regard to getting into the nitty-gritty of rulemaking. And I'm considering making that also available as well, you know, on the docket if you're interested in having that information available.

One of the things that you'll often see in an NPPTL presentation is relevance and an impact that

we'll talk about with regard to the organization's mission.

And in the past several years, there's a National Academy review of the personal protective technology program, and this is a quote out of the -- out of their findings and their review that the NIOSH certification program for respirators has significant positive impact on the quality of respirators available in the work place.

And I think that's attributed to a couple of different things. One is I think it's attributed to the professionalism and the performance of the NPPTL staff with regard to certification activities and being able to take the requirements that are identified and use them to assure that products perform as they're intended. I think it's also attributed to the industry with regard to, you know, coming up and implementing innovative technologies and even to some extent pushing how we do our business with the NIOSH to be able to address the evolution of technologies and the implementation of those with regard to different respirator products.

But then it's also a user issue that users look for the brand, you know. And with regard to things that we've heard, you know, feedback from people around the world that the NIOSH brand means something. The NIOSH brand means that this respirator provides a certain level of performance and people now have an expectation and know what they're getting when they by a NIOSH certified respirator.

I also wanted to mention that there was recently an additional National Academies Report generated which looked at the certification of personal protective technologies as a whole. And I didn't want to get into a lot of detail, you know, with regard to that because it looks at activities other than respiratory protection. But it is an interest read, and I would encourage you to look at it because it does draw some interesting -- make some interesting recommendations, at least in looking at other technologies in comparison with respiratory protection.

Another factor that we consider, you know, with regard to the certification program is our

standards development organization support. And I think many people are familiar with an OMB Circular called A119, which encourages federal agencies to use national and international standards where it's feasible and consistent with established laws and regulations, and that's one thing that we have taken very seriously with regard to our participation in these organizations.

I think the statute or the circular also goes on to state that it promotes federal agency participation in concensus standards bodies by federal employees. And we have taken that very seriously as well.

I think when you look at NFPA, ASTM, ANSI and ISO, various NPPTL personnel have leadership roles with regard to several important committees that are identifying performance standards for various pieces of personal protective technologies. And I think, you know, in particular if you look at NFPA, the standards that evolve for 1981 for respiratory protection, also the upcoming Wildland Firefighter Respirator Standard in that NFPA 1984.

ASTM, we play an active role with the F23 Committee with Angie Shepherd and Bill Haskell to look at test methods to evaluate various performance aspects of personal protective technologies, including respirators.

With ANSI, we participate in all the ANSI committees. I recently became the vice chairman of Z88.2, which is the respirator protection standard. We have also participated in other standards activities like the color coding of canisters and cartridges.

Also with ISO. The ISO is coming. And there is, you know, an international effort looking at identifying and establishing a respiratory protective standard. And Bill Newcomb from NPPTL leads the USTAG, the U.S. Technical Advisory Group, for supporting the types of requirements that go into ISO.

And from that standpoint we're well-leveraged, you know, with regard to how these products are being developed, and hopefully providing opportunities for outcomes where they take our outputs and use them with regard to those standards.

Now, this is a little detailed and it may not become completely clear. I think if you get the paper copy off the website, it's a little more straightforward. But this is what we envision as our three-year timeline with regard to the various modules that we're working on. There's no particular priority with regard to the modules that are listed, you know, at least in terms of what's being worked first.

I will say that with regard to things where we are already in the notice of proposed rulemaking final rule part of the process that those activities have priority over any of the new things that are evolving. And I want to spend at least a couple minutes talking about these different activities that are undergoing

We made a decision to combine the Powered Air-Purifying Respirator and the Supplied Air Respirator standard into one module, and for a couple of different reasons.

One, NIOSH made a commitment to OSHA several years ago that with regard to developing the Total Inward Leakage performance requirements that we would

do that. We would establish Total Inward Leakage performance requirements for those two categories of respirators. This module does that.

We've also taken an approach that we're going to try to use results and material out of other standards, and particularly for this standard, ISO standards with regard to how we evaluate respirator performance, and in particular for these work rates. And the work rates that we're envisioning using with regard to the PAPR and the Supplied Air Respirator are reflective of what has been considered by ISO with regard to their standards requirements.

We're also looking at updating the fee structure for 42 CFR Part 84. One of the things that came out our of National Academy process was the fact that the fee structure has not been updated since 1972. So whether it's a bargain or not, it's hard to say, you know, with regard to the testing costs that we charge applicants. But we have taken a serious look at, you know, how we do our business internally within the laboratory and reflecting in those business functions with regard to what we charge for supporting

the certification activities. You're going to see that in fiscal year 11.

Also in fiscal year 11, we made another commitment to the fire service to establish a regulation to modify the end of service time indicator for the SCBA, the Open-Circuit SCBA; that there was request for us to look at changing a paragraph in the regulation from where we specified a range of values to changing that to be a minimum value. And we're in the process of doing that as well.

Again, it's a result of, you know, stakeholder involvement and a commitment to a stakeholder.

We're also looking at completing the Closed-Circuit Self-Contained Breathing Apparatus standard. And part of when you look at the Closed-Circuit SCBA, it's an evolution out of our CBRN program. At some point during the past decade the department advised us or directed us that for rulemaking activities to incorporate CBRN, that we would do that through the rulemaking process.

Well, for Closed-Circuit SCBA, that was the

next item that we were working on with regard to developing the CBRN requirements, so we transitioned that into a rulemaking activity. You know, that's also going to come to light during the course of the upcoming fiscal year.

And then we have a couple of other activities where we're investing resources. One is what we're talking about today with the Combination Unit Respirators. And I think this is an opportunity for participation for all of us, because I think this is the next evolution of respiratory protection when you look at respirators that can be used in multiple modes.

You know, I think historically when you look at what we've done in the past 10 or 20 years, that we've looked at technologies where we have improved the capabilities of respirators as are currently certified in Part 84. We've done things to make them rugged to enhance human performance. But we haven't come up with a new technology in short of having the Star Trek, I'm going to put this little clip on my nose and I'll have breathing air.

You know, I think the combination unit is a step in the evolution of respiratory protection. And I think with regard to what we're doing with the CBRN program, it's a blank slate. So from that standpoint, it's an opportunity for us to create the performance requirements that are necessary for that respirator.

And then the last activity is the air-fed ensemble. And this program evolved out of discussions and needs identified to us by the Department of Energy for a standard for a respirator where the suit is the respirator. And we're looking at introducing that to the community very early next fiscal year for comment using the Advance Notice of Proposed Rulemaking phase.

And with regard to things that are already in the mill that some of you may be familiar with, the docket comment for Notice of Proposed Rulemaking has closed for the closed-circuit escape Respirator commonly used in mining, the QA Module, and the Total Inward Leakage for Half-Mark in Filtering Facepieces. And these are all activities which are part of our regulatory agenda and really not topics for today, but we wanted to, you know, remind you and let you know

that these things haven't been forgotten and are still part of our regulatory agenda in moving forward.

The other aspect of this slide to keep in mind, I think, is to look at the impact of our national and international concensus standards activities. And I had mentioned ISO. I think when you look at the amount of time and effort that have gone into the standard from an international basis, it's incumbent on us to take a look at that and be able to leverage those resources as well as leveraging work that's done within ANSI. I think with the Z88.2, there's some resolution coming with regard to the development of the respiratory protection standard. I put the date of 2015 in there because I'm optimistic that, you know, as a result of resolution of some other, the current issues associated with previous drafts that we will be moving forward with that standard. And whether it's a standard as it currently exist or a modified version, there will be a standard.

And again, ANSI has prescribed time frames when they look to have the standards developed within. So those activities are ongoing.

We also have the NFPA standards, 1981 and 1984 and additional opportunities for leveraging. There's collective resources that have gone into the development of those standards and using them to make the NIOSH standard better. And the commitment that I have to you is that we take these standards seriously.

And in terms of you helping us define how we move forward, I think these are important things to keep into mind with regard to the content and the technical and performance requirements that go along with those standards and how we can within NIOSH utilize those consensus standards to improve how we do business under Part 84.

So in summary, I, you know, talked a little bit about the movements used, national and international concensus standards and I think when you look at the rulemaking process, the regulation gives us the tools to test and certify the respirators. And it's incumbent on us using this type of process to define the content of the standards for respiratory protection.

And part of what we had put forth and wanted

to get stakeholder feedback were these questions where we're specifically seeking input from you and the community with regard to how we should be moving forward beyond our three years that I had projected.

You know, the first is what classes of respirators do you in the community see having the most need that we should address in the regulatory agenda? Again, the aspects of national/international standards that we should consider in updates to Part 84.

I'm trying to think. We also tried to think outside the box a little bit with a couple of things. And one of the aspects was -- and then it goes back to, I think, a comment I had made earlier was, you know, with regard to -- theoretically the regulation is easier to change than the law.

But now our experience has been, you know, changing regulations isn't that easy either. So from that standpoint, should we take an approach to look within the context of defining Part 84 that we remove specific performance requirements outside of the regulation?

Another aspect -- another outside the box aspect was looking at sector performance requirements or basing the regulation on sector specific performance requirements that these particular requirements are appropriate for health care. These requirements are appropriate for public service. These requirements are appropriate for construction.

And instead of having a one stop shop that this is the respiratory protection standard that the standard can be tailored more to meet the individual needs of the different work sectors as NIOSH identified it.

So with that, I would like to open the dialogue and take any questions that you may have with regard to the content of my presentation, as well as hear any of your viewpoints on things that you think we should consider with regard to the regulatory agenda.

One other thing, at least in terms -- and I'll put the questions slide back up. The information docket for collecting information is Number 221. I believe the docket is open until February 11th. I'll

have to double-check that. But it is on the website and -- at least with regard to accepting comments.

And so with that -- Jeff Birkner.

And again, just as a reminder to everybody. We need to use the microphone for the LiveMeeting participants. So if you could just introduce yourself, who you're with, and your topic.

MR. BIRKNER: Jeff Birkner, Moldex-Metric.

Jon, you address very briefly the QA and TIL modules. But you didn't give a sense of what the schedule is.

Do you guys know where you are and when you expect the regulations to be finalized or what the next steps are?

MR. SZALAJDA: Well, that's a good question. It's a difficult one for me to address as part of the rulemaking. I think the easiest thing for me to say is they are part of our regulatory agenda. There's activity going on with regard to all the things that were identified. And we've closed the comment period. And I think during the course of the upcoming year you will see some additional information coming out with

those three -- three modules.

MR. BIRKNER: Okay. Not the answer I wanted but --

MR. SZALAJDA: Well, I think it kind of goes back to the one slide to keep in mind that, you know, between the departmental review and then the OMB review, there's several things that need to be done.

You guys are being very shy; either that or I put you all to sleep.

Well, I'll tell you what, we'll go ahead. We'll enter the LiveMeeting, see if there are any comments from LiveMeeting.

Okay. Are there any comments from LiveMeeting?

MR. PERROTTE: No.

MR. SZALAJDA: Okay. Cynthia, did we get anything from LiveMeeting? I'm sorry, from social media?

MS. POWELL: Not yet.

MR. SZALAJDA: Not yet. Okay.

No takers. All right. Well, I think what we'll do is -- it's currently 9:36. What I would like

to do is maybe take about 15 minutes for a break. And we will -- with regard to the Combination Unit standard, the next topic in the meeting, it will allow us some time to get a few things set up.

And I think what I would like to do is maybe we will start at five of ten. And I will just give you the NIOSH remarks with regard to the Combination Respirator Unit. And then we'll try to structure that so -- we have three presentations for the Combination Unit Respirator -- Joe Rivera from the Air Force, Brian Montgomery from National Institute of Justice, and John Nelson from Avon.

And what I would like to do is we'll start with Joe, I believe, is the first presenter. And we'll try to start his presentation about 10:15 so it matches with the agenda time. And I will talk for 20 minutes or so, starting about five of ten, at least with regard to some NIOSH's perspectives.

And so with that, we'll take a 15-minute break or so. Thank you.

(A short break was taken.)

MR. SZALAJDA: Okay. We are going to go

ahead and resume the program. If you guys will close the doors, and we're going to go ahead and start.

Terry, could you close the doors in the back?

And could I get somebody to grab that door on the side, please. Thank you.

I just wanted to give the earlier topic maybe a five-minute postmortem at least to stimulate some thought and, you know, give you some examples, I think, of where we would be looking for particular input.

I think when you look at the evolution of our regulatory agenda, one example I think of where we will be looking for feedback came out of closed-circuit escape Respirator module and where a manufacturer of those types of devices had made a recommendation that NIOSH look at establishing and updating the performance requirements for Open-Circuit Escape Respirators, whereas the rule that was being developed addressed closed-circuit technology.

And this particular organization submitted to the docket, and, you know, as part of their

comments that NIOSH look at the evolution and update the regulation for open-circuit technology. So that's one aspect or one example of, you know, the type of feedback that we're looking for.

I think another aspect I had touched on was, you know, with regard to the question regarding the potential for establishing different classes of respirators, you know, in particular like, for example, health care that -- will it be appropriate for NIOSH to develop performance requirements for a health care worker respirator?

You know, another example might be a class of respirator for industrial applications where you have multiple protections in your canister, you know, similar to what was done for CBRN, that we test for 10 tests representative agents as part of the standards process. Can we do something similar, and would that be appropriate for use in the industrial work place?

One other thing to keep in mind would be whether or not is there anything in our regulations where the regulations in the way of particular innovation with regard to how products are brought to

market in niches, that particular devices may serve to protect workers, but yet doesn't fit the categories of respiratory protection.

I can give you at least one example. If you look at the -- some of you may have seen a particular product that looks like a baseball cap that has a little blower on it. How would NIOSH evaluate that? Is that worthy of its own class of respirator, or is that, you know, something that we can try to adapt and test during the requirements that are identified in the current regulation?

And then the last example, at least in terms of modifying the regulation with regard to classes of respirators, and it's my introduction into the next topic, is the Combination Unit.

You know, when you look at this particular type of respirator, should NIOSH take and develop standards associated with the use of different types of products, the Combination Unit being one of them.

So anyway, I wanted to give those ideas as food for thought and at least to help you with your individual and collective thought process with regard

to how we can pursue update of our regulatory agenda.

One of the things that I did want to note, you know, that we will plan on conducting a public meeting sometime mid year in 2011 to discuss other respiratory protective topics. And what I will like to do following any feedback that we get to the docket is to give you an update at that forum with regard to taking our three-year program and how we extend it out to the five-year program.

And so with that, we'll go ahead and we'll move into the Combination Unit part of the discussion.

My project officer on this, Frank Palya, had a family emergency and was unable to participate today, so I'm going to be covering his slides in his absence.

And at least with regard to how we're going to proceed through this part of the meeting, I have a brief overview and then we have three requested presentations.

And the requested presentations are focused on identifying operational issues associated with this type of respirator. And part of what we want to do is

to foster a discussion with how we identify the standard performance requirements to capture these operational characteristics.

At the end of the presentations, we'll have a panel discussion. The presenters will be joined by Bill Haskell from the Policy and Standards Development Branch. And what we'll do is -- will be slides that solicit several questions where we're looking for feedback. And I'll ask the panel for an opportunity to make comment on each of those slides and then solicit feedback from meeting participants here, and then the LiveMeeting, and then the social media with regard to those particular questions.

And at least, as far as the overview for the presentation, the Combination Unit is really -- this standard is the combination of our CBRN activities. We've completed standards for Open-Circuit Self-Contained Breathing Apparatus, Air Purifying Respirators, Powered Air Purifying Respirators, and Escape Respirators.

You'll see CBRN standards evolve in the classes that I discussed in the previous presentation.

There will be optional CBRN performance requirements that you could have that as an added protection for your Closed-Circuit SCBA. Those also will be included with the Supplied Air Respirator Standard, also the CBRN criteria will transition with the PAPR.

So when the new PAPR module comes out, the criteria that was developed for CBRN will go along and be an optional protection that you can get for the PAPR.

So at the end of the day, if you have the CBRN PAPR now, will it be a CBRN PAPR in the future? Yes. That's fine. The regulation will change and evolve the requirements. The CBRN parts of those requirements will stay the same.

But then the last category for CBRN that we're working is related to the Combination Respirator Unit, and we like to come up with acronyms. So right now we're using CRU. If you have a better idea for what we can call this thing, we'd appreciate hearing that as well.

But there are several issues associated with how we define the requirements. So that I think the

nice thing that rulemaking affords us with this is that I'm considering this to be a blank slate, you know, that we're going to use Part 84 and any other national or international standard that's appropriate to identify the performance requirements for the protections that need to be addressed with this type of respirator.

And the key reason for having these gentlemen to my left is that they're going to give us a perspective on what the user thinks is needed for this type of device. And I think that's critical, you know, to us to make sure that we translate those operational characteristics into the performance requirements that we test for in our certification program.

So with that, what's the definition of the CRU? And if you look at the concept paper that Frank had developed -- and that's available through the Internet -- that it's a multi-functional unit that deploys at least two or more different types of respiratory protective devices.

So I think in general when you think of

these things, you think, well, it either purifies the air or you get supplied air. But that's not to say that you could have combinations of other things. You could have a closed-circuit technology combined with an air purifying capability. You may be looking at systems that might be dockable that you can get feed air from a supplied air line while you're doing your mission. There may be things that we haven't thought of. And that can be addressed as well. Because we are going through rulemaking to identify these requirements.

The little catch-all that's currently in the regulation that we fall back on is this paragraph that's right out of Part 84, which basically says if you bring in a combination, what we define in Part 84 as a combination unit respirator, it's classified by us as the least protective part of what you're seeking.

So, for example, if you're looking at a Combination Air Purifying Respirator, Open-Circuit SCBA, we're going to classify it as a gas mask. Now, that's not to say that, you know, there are

combination units that are currently out there. And Joe Rivera will be telling you shortly about some of the experiences that they've had, you know, with regard to a type of respirator that the Air Force is using where it's approved as a SCBA, as a PAPR, as an APR. Three separate approvals, not one.

So the thought in moving forward is, what's the best way of how we define these type of systems? And I think one of the questions we'd like you to think about and get feedback on is how we define the combination unit respirator. From the standard if we define the respirator as subparts of other standards, you know, including in Part 84 and follow that same methodology that we had described in terms of it gets three separate approvals, or is our user community going to be better served that we classify this as one type of respirator, identify what the hurdles are that we need to overcome with existing standards and regulatory language that's in place, and then what we need to do in terms of identifying performance requirements for those features of the respirators that provide the protection that's necessary for the

responder that's using these types of devices?

And so with that, what I'd like to do while we -- the docket for this -- well before moving to the next presentation, the docket for this is 82A. And I had mentioned this morning the fact that we do have these information dockets.

Three or four years ago, we conducted a public meeting. We had an initial discussion about Combination Unit Respirators. That was set up as Docket 82. And now as we go through and have continuing discussions on this topic, we're going to add to that information docket. So the results -- the things that we discuss here today, as well as any products that you choose to provide to us through the docket, will become part of Docket 82A. And this will be our repository of information as we go forward and develop the requirements for the standard.

So keep that in mind. The comment period for this also closes in February. As I had mentioned earlier, we will be putting the presentations that you're going to be hearing up in the docket as well as the transcript. And hopefully, you know, you'll be

inspired by what you hear today to at least share with us, if not today but in the future, what you think should be appropriate and the things that you think would be appropriate for the standard.

And so with that, I'd like to introduce Master Sergeant Joe Rivera who's here with us from -- I hope it's Master Sergeant, correct?

MR. RIVERA: Chief Master Sergeant.

MR. SZALAJDA: Chief Master Sergeant. I'm sorry.

MR. RIVERA: I hope to be there.

MR. SZALAJDA: I like to call him Joe. But we've had a relationship with Joe over the past several years as a result of activities that we've undertaken in the laboratory for addressing the Air Force's use of one of these types of respirators. And I thought it was appropriate for him to come and share some of his experiences that he's had in considerations that went into the selection of the performance requirements for this type of respirator.

What I'd like to do is let Joe have his talk, and maybe we'll take a few questions, if you

have them, for his dialogue. But I'd like to save most of the give and take type of discussion for the panel, if we could do that. So with that, Joe.

MR. RIVERA: Good morning, ladies and gentlemen. I'm Chief Joe Rivera with the Air Force Fire Emergency Services. And for the next few minutes, I'd like to provide you with a brief description of the history of our Combination Respirator and describe how we currently survive and operate in atmospheres that are chemically and biologically contaminated.

And you've already advanced here. Back in the late 70s we're dealing with the Soviet threat and the probable use of chemical weapons if we got into a shooting war. So in the fire business, we use a standard chemical ground ensemble that other members use, which is basically dermal protection and an Air Purifying Respirator, or an APR. So we are limited to surround and drown type firefighting.

AUDIENCE VOICE: Joe, move the microphone back a little bit.

MR. RIVERA: Can you hear that better?

AUDIENCE VOICE: Yeah.

MR. RIVERA: So we were limited to surround and drown firefighting. We weren't able to accomplish our primary missions of interior firefighting and rescue in IDLH type environments.

So we began looking to procure an ensemble that would allow us to survive and be able to operate in those immediately dangerous to life and health, or IDLH environments.

So after about a two decade effort, we came up with a Joint Firefighter Integrated Response Ensemble, or the JFIRE. It consists of three major components. That's the Joint Service Lightweight Integrated Light -- Lightweight Suit Technology, or JSLIST, Proximity Firefighting Gear, and a Self-Contained Breathing Apparatus.

And what this allowed us to do for the first time was be able to do our primary missions of being able to do that interior firefighting and rescue in IDLH environments in contaminated environments.

MR. PERROTTE: Joe, could you move closer to the mike? They're having trouble on LiveMeeting

hearing you.

MR. RIVERA: So how do we operate?

Let's take the Korean Peninsula, for example. We receive intel that the North Korean Army is massing forces and may attack. Additionally, we believe that they've loaded warheads or artillery shells. So we're at a heightened state of readiness. We increase our protective posture. We don JSLIST and have all other personal protective equipment available.

The North crosses the 38th Parallel. So now it's a hot war. We're now in a survival mode. Attack is imminent and chemical weapons will be used. We don APR and other PPE and we take cover.

So we survive the attack. Now, it's time for us to do our primary mission and generate sorties. We have a cargo aircraft with an emergency fire and incapacitated aircrew. We respond, knock down the exterior fire with turrets. In order to make entry into the IDLH atmosphere, firefighters don their bunker gear, SCBA, and transition to supply the breathing air. So we make rescue. We exit the

aircraft. And we're still in that contaminated environment. So we transition back to APR and we take off the SCBA and bunker gear.

Now, when we initially fielded the Interspiro SCBA with APR capability, it met NFPA and NIOSH standards for the SCBA, but not when we converted it to a combination respirator. And the reason for this is there's no test standard to certify the two combination respirators.

Now, as an aside, when I first arrived at AFCESA back in the late 90s, a lot of departments found out that we had this system, including Chicago, New York, and they contacted us and they wanted to have this for their special operations type business. But we were unable -- you know, we said, hey, we can't help you. The thing is not NIOSH compliant. And that was true for us also. We were not able to use the thing for a day-to-day business, other than to train for our wartime missions.

Now, our new SCBA that we began fielding in 2007 is the MSA M7 FireHawk Responder. It can be used in APR, PAPR, or SCBA mode. You can transition

between these modes without exposing the user to contamination environments.

And this SCBA, as opposed to the Interspiro SCBA, is NIOSH and NFPA complaint. But it's only compliant if used as an APR, PAPR, or an SCBA, not if transitioned between the different modes.

So how does this ability to transition between the different respirator modes help us? Here are some potential scenarios where we need to be able to put the system to use.

Unfortunately, the warzone is now here in the USA. The potential for use of TICs and TIMs or CB to attack here in the homeland is very real and it has happened.

So basically, we need this capability to operate for extended periods of time beyond what we would have in a given air cylinder, what the capacity of that air cylinder would be. This is for hazardous materials, weapons of mass destruction, structural collapse investigations are just a few of the operations where we could use the combination respirator.

So today imagine the bad guys hijack a crop duster and they attack an Air Force Installation neighborhood with chemical weapons. Our HAZMAT capability is going to be pretty overwhelmed at this point. However, as I see, if I know that I've got a JFIRE type capability where I can outfit numerous rescuers, I'm going to have a broader capability.

And with the standard breathing apparatus, if I'm operating in a given area and going door to door, breathing that SCBA air is just not going to be practical. However, if I can go door to door, accomplish that search in my area and should the need for IDLH -- you know, transition to an IDLH environment occur, then I can transition to the SCBA and do that type of operation.

Another example is last week where the technical support working group that you heard of and the Intel community was describing some of the investigations on WMD response that they do worldwide. They were doing an investigation to Tbilisi in a facility. In this facility they had tons of the methyl ethyl bad stuff in there. And these guys were

outfitted in Level B APR type respiration. And the people doing the investigation noticed that they had a situation that was getting bad. And being experienced as they were, they held their breath and they backed out of the facility.

Now, that's fine. But I'd much rather have that opportunity to be able to transition to that self-contained breathing apparatus to make an escape from an environment like that.

So these are a couple of examples where we can use this capability. Others include tunnel rescue, coming in or going out of hot zone, incidents where we just don't want to be using that SCBA air, because it just doesn't give us the time we need.

These are a couple of the systems or situations where we can put this thing to work. And I know that the Special Ops folks and the hazardous materials view retypes, can come up with many other applications that we haven't thought of.

So the bottom line for us is these systems are commercially available; MSA Interspiro, Avon. They have these on the market. But we're not able to

fully use the capability. We need to figure out how to certify the systems, the techniques, and tactics that we're going to employ so that the firefighters are safe and that we give them expanded capabilities to accomplish their missions.

So that's kind of how we use the MSA breathing apparatus, a little bit of the background.

Go on down here. I think the next slide may have just been a question slide.

MR. PERROTTE: No. That's the last slide on there.

MR. RIVERA: That's the last one on there. Okay.

So that's how we put the system into use and just a little bit of the background on the Air Force's experience with the combination respirator.

MR. SZALAJDA: Any questions for the chief?

MR. SELL: Hi, Chief. Bob Sell, Draeger Safety.

One question. During out -- throughout your presentation, one thing you --

(Interruption by the conference recording.)

MR. SELL: I can talk now, okay.

You never mentioned about monitoring of the atmosphere.

MR. RIVERA: Correct.

MR. SELL: This is something that is being done, or do you rely on the person how to make the switch over transitions as they determine?

MR. RIVERA: Well, we do monitor the atmosphere. The way that we use the system currently, we don't use it on a day-to-day basis worldwide anywhere. It's strictly a military unique type of use that we have with the NIOSH standards that allow us to do that.

So the situation that I described in Korea, we're going to be out in disbursed types of locations. And we do have monitoring going on on base, and that's our readiness type of personnel that do that thing.

So they're going to say -- and they have the installation divided up into sectors. So Sector 3 has a nerve agent present. So we would at that point know that we're in a contaminated environment. Should we have to -- and we even just have that assumption for

that entire sector.

So if we respond to a given incident, whether it's a mission critical facility or it happen to be somewhere on the airfield, then it was an aircraft, then we would just have the assumption that anywhere in that area is contaminated.

MR. SELL: As a second half to that, would you consider the incorporation of other technology sensors, electronic monitoring in the atmosphere to allow the unit to make the decision to transition, or do you want that to be a responsibility of your monitoring team or operations or whatever?

MR. RIVERA: To be able to transition this from that military entire installation type of attack environment and be able to employ this system in city departments or in our departments that mainly operate in bases in the states or around the world, wherever they may exist, we'll have to have that individual monitoring capability. And so these are going to be some of the details we have to work out.

So, for example, if I've got a tunnel type risk like we had in France a few years back, the big

fires, if I know -- if I've got to go from the cold to the warm to the hot, if I can get through the warm zone and if it takes me 12 minutes to reverse that distance, and I'm going to have something that tells me, hey, you're in the warm zone; you're okay with a particular filter or whatever it may be. However, now you know, I've got to go IDLH. Because you know, I can't necessarily see something. I mean, it may be obvious and I can't see it if it's a fire type scenario or that type of thing. Otherwise, we're going to have to have that very thing.

MR. SELL: Thank you.

MR. SZALAJDA: Any other questions from the participants here in Pittsburgh?

LiveMeeting, John.

MR. PERROTTE: It's already in mute.

MR. SZALAJDA: Okay. Any questions from the LiveMeeting for Chief Rivera?

Okay. Cynthia, do we have anything from social media?

MS. POWELL: No.

MR. SZALAJDA: No. Okay.

All right. Thank you, Chief.

And next, I'd like to introduce Brian Montgomery with the National Institute of Justice.

MR. MONTGOMERY: Okay. Thank you, Jon.

I'm Brian Montgomery, National Institute of Justice. I'm a physical scientist there as the Officer Safety and Protective Technologies Program Manager. I also manage the Explosives Programs at NIJ.

And today I just want to do a quick overview of who we are, just so you know where I'm coming from, and I'm going to show you a little video, and then I'm going to go into some of the requirements that we've gathered from the law enforcement community

So first of all, just really quickly, who we are. We are the research development evaluation arm of the Department of Justice. We get our authorization from the Omnibus Crime Act -- Control Act of 1968, as well as the Homeland Security Act of 2002.

Our goal is to enhance the criminal justice system. So we look at law enforcement, corrections,

courts, various pieces of the criminal justice system and try to improve those systems, and to increase public safety. We go through the scientific process, open competition, peer review, as well as publishing reports and archiving data for future use.

I'm part of the Operations Technology Division. That's one of the seven divisions within the NIJ. What we do is we manage research development efforts in various technology areas. There's about six of those, including both of my programs. We identify technology requirements. We do manage developmental standards, test methods and guides for law enforcement and criminal justice communities. We administer and manage equate efforts within the National Law Enforcement and Corrections Technology Center. This is one of our outreach components as well as our centers of excellence that do test evaluation for us. And we provide technology, information, and assistance to the field.

So what I want to bring up here is a quick video. This was given to me by DHS, if I can get this tape out.

MR. PERROTTE: Just hit escape.

MR. MONTGOMERY: I have it. It's not willing to pop out.

As it begins to come up, I want to kind of set this up for you a little bit.

DHS did an assessment of some various equipment in a WMD type scenario, which you'll see you're inside of a room. You'll see three bad actors -- well, they're actors, but they're bad guys.

The team that come in has some knowledge of what's in the room. They do see or know that there are PP ensembles, as well as SCBA equipment. I'm not sure of their knowledge as to whether the bad guys inside the room are wearing that equipment or not.

You will hear with -- hopefully, you'll hear within the video some of the issues that we're going to have with the respirators systems and you'll also see that the suspects here react to what they hear.

They start out on a ground floor. Again, this is a third floor of the facility. They start on the ground floor. They come up the stairs and basically make entry without too much of a hesitation.

So you'll see how much time they've had to react.

(Whereupon, a video was shown.)

MR. MONTGOMERY: So you can see some of the PP ensembles and stuff found around the room.

(End of video.)

MR. MONTGOMERY: Okay. Is there something that concerns with what you saw on that video?

If you heard about two-thirds of the way through, once they made entry, there's a female voice you heard go, bang, bang, bang. That was the third person who kept calling, "I hear someone on air," took a position next to the door.

The first two through the door did not look that direction; the third one did. She probably took out the first two officers that came through the door.

So you saw how much time between when she start calling, "I hear someone on air" and they actually made entry into the room.

So I want to go through some of the requirements I've gathered from various people within the community. I've broken these down into some

subcategories; Mission Utility, Operational environmental, Interoperability, Environmental concerns, Heads-up Display, and I also want to talk about Filtering a little bit.

These do -- most of these do directly relate to the topic at hand, but also relates to other systems as well.

First of all, Mission Utility; Mode switching. That's basically what we're talking about here today.

What's come from the field is that they would like to be able to have stood outside that door in a quieter mode, set up, and not had that noise coming through the doorway.

If they know that there's not that imminent threat, IDLH threat right there at the door. Now, if they had knowledge that the people inside the room are not wearing their PPE, they pretty much know they're probably safe. Because they would be in trouble, the people inside the room would be in trouble.

But as you saw as when they came through the room, they hid a second room beyond. They don't know

what's behind that door. So they need to have the protection available to them to possibly switch over to that higher protection and get through that door and take care of what's behind that door.

Currently, if they needed to do that, they'd have to switch out systems somewhere in midstream, and that's just not possible.

One of the questions brought up about manual versus automatic. There are pros and cons to both of these. Some of the concerns from the law enforcement community is a system failure concern with the automatic, whether it be sensor failures, switching failures, or somehow it automatically switches to your air, which you're out of there, without having that knowledge.

For manual switching, there is training and user failure concerns. Does everybody get trained properly to know when and how to make that change, as well as going back to what was brought up a few moments ago about how does he know when to make that change?

This will increase operational duration. If

they don't have to turn that air on until they actually need it, they can spend a lot more time doing their mission.

Within the law enforcement community, it's very difficult to come into a tactical situation and have to pull back out every half hour to 45 minutes to switch out air, because they may need to stay somewhere for an extended period of time.

Also, you need to look at improved stealth, noise reduction. Obviously, from the video you saw that was a good 30 seconds or more that they had time to prep for them to come through the door.

One mask or system for every mission. This way they're not carrying three or four different systems with them. They can switch back and forth between whatever they have to meet the mission they're going after.

Also, be able to change dynamically, just as I've already mentioned. As they go from one situation to another, be able to have the protection they need against that task, against that risk.

A couple of more direct pieces on the noise

considerations. Reduce noise over the entire system, That's typically for the PAPR and SCBAs. Inhalation/exhalation valve noise reduction, is where a lot of that comes from.

Also alarms. To have an audible alarm for a tactical officer is really not acceptable for their mission. For them to go in and just be ready to enter a door and then hear an alarm go off, that's going to tip off the adversaries.

One of the other major concerns that they have is weapon sighting, being able to get that good -- when they do long rifles or rifle sighting, they need to have what they call a cheek weld -- a good cheek weld fit so that -- the bud of the weapon has to be up against the cheek to be able to get a good sight picture down the site. With bulky masks it's just not compatible. And the filter must be a side mount just for that reason alone. A front mount will cause issues with that sighting.

When we look at optics, the Visual Field Score may need some research on what that really needs to be for the law enforcement community. They need to

have more accurate visibility coming out of the mask because of the threat they're facing with the act of shooters and other issues.

Fragmentation protection. Again, they don't know what they're coming into. There could be possible IEDs in the areas and other issues with fragmentation. And they must be able to accept optical modifications as with most mask now.

Speech is another concern. And when they get into the multi modes where to place that speech, how to handle that speech.

Currently, from what I understand, a lot of the speech capabilities are straightforward speech. Those that fit the law enforcement community? Maybe, maybe not. There might be some consideration of some low volume speech available at 360. So that when officers looking down range or at the adversary or in the area of the adversary, he doesn't have to turn his head to speak to his companions.

One of the -- a concern that has come up on some of the research development side of this, as well as from the officer side is flame resistance. The

full system needs to meet three requirements, including the harness, which is one of the concerns that has come up over this because of the need to make that a more robust material.

Flash over is absolutely needed. This is more of the meth lab scenario. Go to the meth lab. Chemicals go off. You got a flash fire. They need to be protected from that.

Is a bake test needed? The officers don't typically go into a fire and stay in the fire. They go in and go out. The flash over is more their concern with that.

Hydration free systems. Depending on how these combination units work, the hydration may be an issue. And it's a must for the officers. Again, they may stage for hours at a time before going into a situation. So without having a hydration capability, it's going to make it very difficult for them to perform their mission.

Flow rates. That was just briefly discussed a little bit at the meeting I had with my officers. And they're wondering if maybe there needs to be some

research for law enforcement specific flow rates. Maybe, maybe not.

Interoperability with communications. And this fits basically all systems, as well as the combination units; radios, hearing protection and various other communication devices. If they can't communicate with each other, the mission is going to be very difficult.

Helmets; proper fitting. I have a picture. I usually show this slide, and I didn't insert it here; but it shows an officer wearing his PPE gear. He's got his system on. He's got a helmet that he can't fasten the chin strap because it doesn't fit properly. He's got a bunch of equipment hanging off everywhere. It doesn't even look like he would be able to walk around very long, much less perform his operations.

So that comes to developing or looking at these systems or even standards for these systems. Need to have a look at operations and how this equipment fits together with it.

And again, body armor, as well -- working

with these symptoms. Various tools that are used by the law enforcement community. They're very similar to the fire community using their tools.

Everybody talked about the weaponry and hearing.

Range of motion. Once you start getting all this equipment on them with all the possible hoses, filters, and various pieces, it makes it difficult to get around in these systems.

Heads-up displays. That's been a kind of a push from the community as to have ways of visually seeing their statuses without having to look around for different sensors on cables or lighting on cables or various pieces.

Because of the way the filtering of things work, the APRs, they don't see it is necessary for an APR system yet. And that's when they start getting sensor that can determine breakthroughs and usage of filters. But currently for SCBAs and PAPRs, you know, battery life, air time, those types of things.

If you do look at having a heads-up display, it cannot be visible outside of that officer. So you

got to really reduce the amount of reflection or any of the ways that someone can see that officer from a distance because then that gives them a perfect target point as to basically aim at that light.

Field of vision consideration for the hoods. Basically just as I mentioned earlier, it's got to stay out of the way of what they need to do operationally, but it needs to be visible when they need it.

And also power replacement easily obtainable, easily replaced as with most other systems.

Environmental considerations for any of these systems. Heat. When it comes to law enforcement usage, they don't typically have it stored back at the station or back at their home base. It's usually stored within their vehicles or within a vehicle that may be out on the roads quite often or parked outside.

So we have issues with these being stored in trunks of cars, back seats of cars, and those type things, as well as cold, freezing for the same

reasons.

Salt water and sand. We have those operations -- I'm sure the same operations in the fire community possibly.

Altitude. And that could be ways of adjusting breathing resistance and for looking to combine respirators. That could be an interesting hurdle to overtake. It already is with -- just as it is, much less taking altitude into account.

Static discharge. And that could be dependent upon how the switching is done. If it's done automatically, there may be some electronics involved, it may issue a static discharge.

Again, this goes back to one of the meth lab requirements, that if they go into a meth lab, some sort of static goes off, they can set off the chemicals. So we want to try to keep that to a minimum.

The last, but not least, a little touch on filtering. And again, I know this isn't quite specific to this discussion. But something needs to be looked at if we do look at a standard in this

direction.

Currently, that the filter is protruding from the mask. There have been some issues with accessibility to the suspect. So the suspect can grab ahold and rip it off your face.

Inoperability for other equipment. Field of vision. And again, platform stability. So if you have too much weight out there on the end of that mask, it could pull the seal and cause a break in the seal.

That's what I have for now, and then we'll have a little more discussion here in a few minutes as a panel discussion. And I know it's a little bit outside of the scope here, but I wanted to kind of give a good overview of some of the requirements and needs from the field.

This is my contact information. Feel free to contact me at any point for anything in the officer safety realm. And I guess we'll open it to a few questions if there are any.

MR. SZALAJDA: Go ahead, Bob.

MR. SELL: Oh. Bob Sell, Draeger Safety.

I am also a member of the NFPA Respiratory Protection Committee. There were several members of the committee here, including the Technical Correlating Committee Chairman.

This topic concerning other applications for self-contained breathing apparatus has been brought up in some recent meetings. And the NFPA, I believe, Bruce Teele, correct me if I'm wrong, has tried to solicit other individuals from other agencies, particularly law enforcement, to become members of the committee.

I mean -- maybe you -- or you can get out the word to others that, you know, they can be considered if you want to start looking at some of the modifications or enhancements that you've talked about here.

MR. MONTGOMERY: Absolutely. If you could send me some of the information that I can get out to the field to contact whoever you'd like to have context about possibly getting on those committees, that would be great.

MR. SZALAJDA: Any other questions from the

participants here in Pittsburgh for Brian?

Okay. John, do we have a LiveMeeting?

MR. PERROTTE: Yeah. I have them. It will take a second, Jon

MR. SZALAJDA: Okay. Sure.

For our LiveMeeting participants, are there any questions for Brian Montgomery?

Okay. Next, social media.

MS. POWELL: No question.

MR. SZALAJDA: No questions. All right.

Thank you very much, Brian.

And our next presenter is Jon Nelson, and he's with Avon Protection.

MR. NELSON: All right. Thank you, Jon.

Good morning. Thanks for allowing me to speak this morning.

My name is Jon Nelson. I'm with Avon Protection Systems, and my presentation this morning is going to cover the Combination Respirator Use -- Unit and the Homeland Security market.

So the first slide is, what is a Combination Respirator Unit?

Jon spoke about that this morning in Frank's presentation. And it's a combination of multiple organic pieces that are, be it a PAPR, an APR, an SCBA, or a CCBA. And those can be combined one or more components to be utilized effectively in an environment or in multiple environments.

So the end user -- let this load -- current user groups out there right now, that are using combination breathing apparatus or Combination Respirator Units are the Department of Defense, the Air Force in their JFIRE program, USSOCOM -- USSOCOM is a huge proponent with the Combination Brudar (phonetic) Respirator Unit; Navy, EOD as well as local, state, and federal law enforcement, and the National Guard Civil Support Teams.

These end user groups out there in the market are predominantly Department of Defense oriented, although there have been large movements in the Homeland Security market for these customers to utilize these types of apparatus.

This provides them with the best overall source or solution to multiple issues that could arise

during an operation related to domestic terrorism, international terrorism, and even clandestine laboratories with the manufacturer of methamphetamines

So the history of the combination breathing on a respirator unit.

Around 2000, 2001 United States SOCOM, Special Operations Command wanted to find a way to integrate the C420 PAPR technology into an SCBA and have the ability to switch back and forth between both units. So you have an initiative started by the Department of Defense in 2001 with two different service components within USSOCOM; the Navy on one side, the Army on the other.

Two different apparatuses were -- or apparatus were developed out of these components. And those we'll discuss here shortly related to what both of those items are.

The specialty users required multiple modes of operations. The primary target was the invasion of Iraq in 2002, 2003.

The operators need to be able to use these units in environments for extended periods of time,

including for up to eight hours. The primary target was the caves in Afghanistan and the underground bunkers in Iraq.

As you know, a 60 minute cylinder on a self-contained breathing apparatus gives you possibly 60 minutes. The average user is going to breathe that in approximately 30. Okay. Thirty minutes was not enough time to leave their line of demarcation or the point of departure, make entry into the target location, conduct their operation, and then come back safely. All right.

They needed an apparatus that would allow them to move from the cold zone into the hot zone, perform the operation and then extract back to the cold zone for decontamination.

The equipment that was developed during both of these programs included a respirator that was capable of operating in both positive and negative pressure. Okay. This was unique to the marketplace.

Prior to doing this, you had either an Air-Purifying Respirator or a Supplied Air Respirator. All right. And both of those needed to be combined in

order for this user group or these user groups to be able to use their pieces of equipment efficiently.

It also developed a multi-functional PAPR module or a PAPR unit. And then you also have a stripped down SCBA. The SCBA are Self-Contained Breathing Apparatus that were typically found out in the marketplace for fire oriented, so they had a number of different components that were not necessary for the military user.

So what they wanted to do was go stealth and strip it down as much as possible to allow them to utilize it without alerting those forces that were massing against them to know that they were on location.

So I spoke earlier about two types of systems that were developed by the individual service components. The first was a combination system. That combination system took the C420 PAPR technology and integrated it with an SCBA that allowed them to switch between positive and negative pressure through the use of the box.

The second system that was developed was a

hybrid system. All right. The hybrid system was a Combination Respirator Unit, although all components were integrated, integrated into one chassis. All right. And that program was known as the Scout. All right.

Both of them combined Air-Purifying Respirator, Powered Air-Purifying Respirator and Self-Contained Breathing Apparatus into one component or one unit. What the Combination Respirator Unit gave them was the ability to individually select components for use during various operations. So they could use the PAPR when necessary. They could use the SCBA separate of the PAPR when necessary. They could use the APR individually, or they could combine all three components to utilize in combination of each other.

Whereas, the hybrid system everything was integrated onto one chassis. It provided for the ability to do Self-Contained Breathing Apparatus, PAPR, and APR all on one chassis. But if you needed to use one individual component, you were stuck using that same apparatus only if you needed to use APR mode

or PAPR mode on that particular apparatus.

So why a Combination Unit?

The combination unit for the Homeland Security market and the Department of Defense offers the ability to change on the move and also provides operational flexibility. It allows for longer operational time in excess of 30 to 40 minutes, which is your typical SCBA use time, even though I have seen operators go 60, 70, sometimes 80 or 90 minutes on a 60-minute cylinder. But those are very unique cases.

It tailored to meet specific threats. If you know you're going to see biological, you can tailor to work against those biological threats. If you know that you're have going to have an IDLH environment, whether it's low to where it's oxygen enriched or oxygen deficient, you can utilize that Self-Contained Breathing Apparatus for that particular environment. So it offers a lot of different options that are available aside from being stuck in one particular apparatus.

Product familiarity. Users were used to using Self-Contained Breathing Apparatus or an APR or

a PAPR. It limited or minimized the training time to be able to utilize any of those apparatus. Currently, it's proven in operational technology.

The Combination Respirator Unit within the Department of Defense has been in service since 2002. All right. It's been operationally used in Afghanistan and Iraq and other parts of world. They are known safe devices as tested by the Department of Defense.

What that brings us to is the ability to correlate or transition that particular technology over to the non-Department of Defense market. All right. Because those technologies are proven. The operators know they're safe and it gives them the ability when they transition away from military life to be familiar with if those folks transition into law enforcement careers, transition into equipment they were familiar with from using in their prior career.

Certification challenges. All right.

Currently, as Joe stated and as Brian stated, there's no current published standard for a Combination Respirator Unit. All right. Typically,

the Department of Homeland Security and their authorized equipment has a line number for a Combination Respirator Unit or a combination breathing apparatus. But each component must be certified individual of each other, and there is no certification for the transition from one mode of operation to the other mode of operation.

So again, it creates a bit of a conundrum for the operator out in the field.

The end users, who are they?

You know, obviously we're focused here on multiple user groups, be it industry, Homeland Security, which is your local, state, and federal law enforcement agencies, the Department of Defense.

Who are your end users? What kind of standards are required for each one of those, because each one has a different need? Who may need it? You know, those are questions that we must ask ourselves. How should they use it? Do we define how it's used, what it's used for? Or do we allow that interpretation to come from the user base?

42 CFR. Obviously, we're here to discuss

that. NFPA, 1981, 2007 and soon to be 2013. Those are the fire standards for Self-Contained Breathing Apparatus.

You know, do we stay and utilize either of those, or do we combine them, or how do we work between those? You know, which user group demands or needs one specific set of rules over the next? Where do we go with that?

Procurement methods. Currently, the Department of Homeland Security has their grant programs. A lot of agencies, local and state agencies within the United States depend on grant funding to purchase their technology needs. And that includes PPE, or personal protective equipment.

The Combination Breathing Apparatus right now is at a standstill within the Department of Homeland Security, simply because there's no defined standard to prove these units to. And also because there's varying opinions within the FEMA grant directorate, not that that's a bad thing. All right. But the end users must stand up and say we want this; this is good technology, or this is bad.

And FEMA needs to understand that. And I'm not here to bash FEMA, because they do a phenomenal good job. But there are those things that are out there that a lot of folks who come from one side of, say, the fire service. And those standards on the fire service don't transition over to the law enforcement side. And the law enforcement standards sometimes don't apply to the fire standards. So there needs to be some common ground there.

Operational considerations. This has been discussed a couple times today, you know, when does a user need to change modes? Is there sensor technology integrated into this?

I'm a firm believer that it should be. Because the lowest common denominator could be that a patrolman who's never worn this equipment before, who's never trained in this. However, that's the worse case scenario. But the fact of the matter is if you don't have sensor technology built in, it's hand-carried, you know, the user is not going to know when to transition from negative pressure to positive pressure or vice versa.

User awareness in the environment. The heads-up display was discussed. Heads-up display is a phenomenal tool, you know. Can that heads display integrate that sensor technology into it?

Stealth operations. Again, 42 CFR, NFPA 1981. 1981, 2007 Edition states that you must have independent and redundant alarm. In the law enforcement community, those independent and redundant alarms can be a risk, can be a safety risk for those operators.

So where do we stand? What do we do? How do we integrate those things? Switching again, switching from APR to PAPR to the SCBA and back to APR and PAPR.

Filters. You know, if you have a PAPR or an APR in conjunction with an SCBA, how do you know if your filter is contaminated? How do you protect that filter from contamination? What steps need to be taken to understand whether it's safe to transition back from SCBA to PAPR?

Again, more considerations. SCBA mode. It falls in line with the filter contamination. Do you

need to cover the end that's on the filters?

Is that safe? Can you effectively transition back to negative pressure if the filters are covered during an operational use when you're in an opposite mode?

No reversionary mode. You know, are you able to reverse? What is the standard going to state? Do you reverse or do you stay in the secondary or primary mode of operation?

Auto switching between modes. Me personally, I'm not a fan of anything automatic. I've got 14 years in the military; six as a team leader on a chemical recognizance detachment.

Auto switching in the military mindset for myself is one of those things that I like to have control of what I'm doing. And again, plus I've trained for it. If you've trained for it, you understand your sensor technology and your analytically equipment, you're able to understand best when to do those things.

So again, it's a training thing. But auto switching can be good. I'm not against it. It is a

habit. But again, you fall back to the theory of one is none; two is one.

All right. If you don't have the ability to switch manually if your automatic system goes down, the operator must leave the environment, and it could be detrimental to the operation overall.

So that concludes my presentation. I went through it a little quick. Is there any questions?

MR. CLOONAN: Can I ask a question?

MR. NELSON: Absolutely.

MR. CLOONAN: Hi. I'm Terry Cloonan. And it's a pleasure to listen to your presentation.

You reference the slide that address the combination --

(Interruption by the conference recording.)

MR. CLOONAN: -- the combination and the hybrid system description --

MR. NELSON: Yes, sir.

MR. CLOONAN: What's your perspective related to the facepiece and having an assigned or an unassigned facepiece used with the hybrid system configuration as you depicted it?

MR. NELSON: So the question is, what's my opinion of having an assigned or unassigned facepiece directly related to the combination unit?

MR. CLOONAN: No, sir. To the hybrid unit.

MR. NELSON: Oh, to the hybrid unit specifically.

MR. CLOONAN: The total control unit, yes, sir.

MR. NELSON: Well, do you want my personal answer, or do you want the business answer?

Because quite frankly, we manufacturer that facepiece. And as it stands right now, that facepiece allows -- it allows it to be issued to the individual operator for use in operations other than used specifically for hybrid apparatus.

So that user effectively gets an air purifying respirator or they can use a negative pressure mode. They can also couple that -- in the military environment, you can couple that with the C420 PAPR, okay, for use outside of the hybrid apparatus. They can then transition that mask over for use with the hybrid in both positive and negative

pressure modes.

So in the business case and the personal case, it allows the operator; one, to have one facepiece across the whole of the equipment that he is issued or she is issued. So that allows you to fit test on one piece of equipment when it's required.

And that's one thing that I did not include into my slides, and I probably should have is, you know, annual certification/recertification of that primary respirator. You know, that is an important requirement and it is standard. It must be done by regulation.

And when you have multiple facepieces, and, for example, I was with an agency a couple weeks ago. Their operators had five facepieces, five, okay, five facepieces for different types of scenarios, okay.

That is an extremely large amount of facepieces that the user has to spend time fit testing annually. And in my position, a single facepiece eliminates the need for all of those.

And personally from standpoint as an operator, the less time I have to spend making sure

that multiple pieces of equipment that I used to do similar jobs is good to go is better.

So to answer your question, a single facepiece would meet the needs. But again, you know, I'm a bit biased.

Does that answer your question?

MR. CLOONAN: Yes, sir. Thank you.

MR. SZALAJDA: Do we have any other questions from our participants here in Pittsburgh?

Okay. How about our LiveMeeting audience?

MR. PERROTTE: No.

MR. SZALAJDA: Okay. Social medial?

MS. POWELL: Dan Rossos.

MR. SZALAJDA: Oh-oh, okay.

MR. ROSSOS: Jon, can you hear me?

This is Dan Rossos.

MR. SZALAJDA: Hi, Dan. How are you?

MR. ROSSOS: I'm very good. Thank you.

I just wanted to make a quick comment if I could.

As Bob so indicated earlier this morning, we -- my name is Dan Rossos. I'm with Portland Fire

and Rescue, and I'm the Chair of the Respiratory Protection Committees within the BA.

And we are entertaining right now a proposal to the standards council to basically split 1981 and make it, if you will, two documents. That would primarily identify Open-Circuit SCBA for the fire service and have another document or standard that would be more applicable and designed for emergency services, which, in fact, would eliminate some of the things that were brought up today regarding issues of stealth mode and reflective tape, and so on and so forth.

And so what my hope would be is really to throw out an invitation to everybody there today that would be interested in that emergency services end, to have an open invitation to attend our next meeting and any of our upcoming meetings so that we can really glean from you what those specific needs are to better help serve the emergency service industry that we're trying to reach out to right now.

So I can later on today or, perhaps, through somebody there that's representing 1981 give you the

information regarding contact to me personally, or how to get ahold of our liaison so that we can make arrangements for you to be at our next meeting.

MR. SZALAJDA: Great. Thank you very much, Dan. Good comment.

MR. ROSSOS: You're welcome.

MR. SZALAJDA: Any other comments from LiveMeeting?

Okay. Great. Well we're going to go ahead and we'll move -- thank you, Jon.

MR. NELSON: Thank you.

MR. SZALAJDA: I thought I was tall.

One of the features that we tried in previous public meetings, and it seemed to be well received, was the concept of having a panel discussion where we specifically are looking for information on the topic, and to allow people with interest to address questions, and as well as allow me to moderate a discussion between the audience as well as the experts in the field.

So with that -- because I'm not really sure when the box lunches are coming for purchase -- we're

going to move into this and take as much time as we need to get through the different topics that we'd like to cover. And then that will wrap up the combination unit part of the meeting.

At least as far as the rules for the discussion, what I will be doing is as the topics come up, I'll ask the panel for their opinions with regard to each of the topic areas on that particular slide. And the questions are oriented to facilitate the discussion, I hope.

And then after the panel has an opportunity to comment, I'd like to get your feedback and views on different areas. And please, you know, don't be shy. This is your opportunity to talk with the user community or people that have an understanding of what the user requirements may be and to allow that discussion to occur. And then we'll move and let the panel have their comments, the audience here have their comments, and then we'll look at the other media as well, as we go through the different slides.

And again, you all, this is being recorded. It will all be captured in the transcript that will be

in Docket 82A.

And so with that, the first discussion topic is related to how do we define the Combination Respirator Unit?

And I think in during the course of discussion, you've heard a couple of different facts. You know, one is how we do business now, you know, at least in terms of what's defined in Part 84 with regard to combination units in approving the respirator at the lowest category of protection.

But keep in mind, again, with rulemaking this is a blank slate, you know. The canvas is available for us to create and identify the requirements that are necessary for this particular class of respirator. And the CBRN CRU will be a class of respirator. It will be a stand-alone subpart in the regulation.

So with that, I'd like the panel to consider on this topic these questions. These are better to reflect the unit as combinations of existing types of respirators or the classification as a new type, or the other things that we should consider. And I'll

start with Chief Rivera.

MR. RIVERA: Well, from my perspective, we've got these existing respirators; APR, PAPR, SCBA. So you know, I mean I look at it as a combination of existing respirators. There are other applications come on line, though, as you mentioned with the Wildland potential respirators that are being developed or the standard that's being developed for those. But I perceive them as existing respirators.

MR. SZALAJDA: Brian.

MR. MONTGOMERY: I guess from my perspective I agree with that and -- what needs to be looked at is our assessment of the standards, as exist, and to see if they are technology prohibitive. And what I mean by that is that we don't paint ourselves into a corner with the way the standards are written and only a certain type of technology can be used. Because as the chief said, there's stuff coming on line and there's stuff happening and materials and various other R&D efforts that could really push the envelope on some of these technologies. And if we make it as a combination of current respirators, we may be limiting

ourselves to what might be available.

But we do have a lot of knowledge on what those are so -- I'm common defense on that one.

MR. SZALAJDA: Okay. And Bill Haskell.

MR. HASKELL: Yeah. I think the best way to define these is still very foggy. And I appreciated the gentleman from Avon showed the combination versus the hybrid concept. And I think it depends on the design and configuration of these systems and where they go.

If you're selling basically like a CBRN certified SCBA and then you're selling a module or PAPR unit that can plug onto the back of it very easily, maybe that's one type of category. But if you're selling them something like that hybrid, which everything is permanently designed and fastened together. And you wear everything every time you enter, I think it's a little bit of a different situation.

So I think we need to see where it goes from there and what type of modularity and build and dismantle capability the systems have.

MR. SZALAJDA: Joe.

MR. RIVERA: Yeah. To the standards themselves, and I remember being on a FPA 1500 Committee on Firefighter Occupational Safety and Health, and have been for about the last, I guess, nine years, so familiar with that. But they are consensus standards.

And I would fully agree with Brian where he made the comment that the new technology industry is coming on line with every day the new and improved mousetrap, whatever that may be. And the standards preclude the use of some of the improved materials, components, whatever they may be, for various types of PPE.

So I strongly agree with that. There are some design things that preclude us from using the technologies that will meet the performance standards and that just seems to be a no-brainer. So I fully agree with you.

MR. SZALAJDA: I'd like to take any questions or comments on this -- on the definition topic from this floor.

If you have any questions regarding what the panel said or your opinions on the best way to define the CRU requirements.

MR. FINEGAN: Hi. I'm Bill Finegan. I'm retired Philly Fire and Rescue. And I've been thinking about this and it occurs to me that what we're talking about are two different sets of variables.

One is from a tactical perspective what options are available, which modes can you switch in it and out of. I think that that's one thing that needs to be addressed.

And then the second is how can the systems be configured, going on what Bill Haskell just said, that there are five different options and you can put those five different options together in five -- in a hundred different ways.

So there are a lot of solutions that industry could bring to the problem. And in order to build the gear that's needed in the field, you have to stay focused on, you know, what is needed by the operator. And just from my own perspective, the

language that we use is important. And I think that sometimes we make subtle mistakes that impact how we write the standards.

An example is calling it a 30-minute bottle or a 60-minute bottle. And that doesn't do any good. Instead of talking about a 30-minute bottle, if you could define it as a 600-liter bottle or 2000-liter bottle, you're just clearly defining the scientific elements of each piece and figuring out what the limiting factor is for each piece. I mean, bottle size is obvious. But something that's a little more subtle is if you have a PAPR and you put 16 cans on a PAPR and you say it will last for six weeks, but you're only given one battery, the limiting factor is the battery.

So looking at the complete system and figuring out what the limiting factors are for each piece of the system, and instead of creating a pass/fail standard, if you could, rather, view it as a way of determining what the attributes of each system that's created are so it will give you, you know, 60 hours of PAPR and two minutes of air.

If you characterize each system that way, it allows the individual operators and individual teams, people who are purchasing the gear, to do their own trade-offs, to look at the gear, and, well, I need something because I'm at high altitude, or I'm in the -- you know, wherever I am. They can look at each set of gear and determine what the attributes are of the gear, test it scientifically against a standard. Standards are -- not a pass/fail, but a grade. It's just some thoughts I had.

Thank you very much.

MR. SZALAJDA: Thank you.

Any comments from the panel?

MR. PERROTTE: None.

MR. MONTGOMERY: I agree with what you're saying. You have the current pass/fail criteria for the protection part of it as to what gets in, what doesn't get in, and how that happens.

But to be able to give the user an opportunity to make a decision based on third-party testing of the equipment to determine what it actually does for them, that's a tough balance to do there.

Because typically as a standards organization or a federal entity, we can't really back a product or back a manufacturer.

So we have to be very careful how we handle that. But as long as it's a -- we did everything the same way and here's the results. You make your decision. I can see where that could be a benefit.

MR. SZALAJDA: Any other questions from the floor here in Pittsburgh?

John, it looked like you wanted to get up. Okay.

Anything from LiveMeeting?

MR. PERROTTE: I'm having a lag time. Hang on.

MR. SZALAJDA: Okay.

MR. PERROTTE: Hearing is along the way.

MR. SZALAJDA: Okay. Do we have -- I'm sorry. Go ahead.

MR. SPELCE: Can you hear me?

MR. SZALAJDA: Yeah. Go ahead, LiveMeeting.

MR. SPELCE: This is Dave Spelce with the Navy and Marine Corps Public Health Center.

I've got from a respirator program management perspective, I recommend having separate approvals for each operational component, mode of operation, which will align with the OSHA policy and 29 CFR 1910.134(d)(3)(i)(A), which states: "When using a combination respirator, employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used."

MR. SZALAJDA: Okay. Thank you, Dave.

MR. SPELCE: Thank you.

MR. SZALAJDA: Any comments from the panel on that suggestion?

Okay. Any other LiveMeeting comments?

Okay. Any social media? Are we back up?

MS. POWELL: No. We're still off line.

MR. SZALAJDA: Still off line. Okay.

The next topic is performance related regarding the performance parameters associated with the use of the Combination Respirator Units, you know, what types of performance activities.

We heard in the presentations this morning

some of the factors that have gone into the current products and whether or not those factors are pertinent to what goes into the CBRN product, the CBRN CRU product. Also, we're also curious to hear feedback on types of use restrictions that may be necessary for this type of product, as well as identification and special cautions and limitations.

And what I'd like to do is we'll start with Bill Haskell this time and work in reverse order.

MR. HASKELL: Well, related to performance parameters, I think one thing we need to consider is the protection afforded the wearer is a system of equipment, not just the respirator, but also the ensemble.

And the National Institute of Justice recently finished and successfully released a new standard for CBRN protective ensembles for law enforcement, which does define hazards and exposures for four different categories of law enforcement responder levels. It also requires that the ensemble manufacturer submits specific makes and models of CBRN approved respirators for the ensemble certification

process.

So I think maybe that standard that was developed for law enforcement is going to help start to put a frame around the performance parameters for the entire system, including the respirator.

One of the things you consider in one of those standards, LERL-1 for use with the self -- Supplied Air Self-Contained Breathing Apparatus is going into things like drug lab takedowns in an unknown environment. And, you know, when you get down to the fourth level, that's more where a law enforcement officer would be doing perimeter patrol and be allowed to wear an air-purifying respirator. So I think some of the ensemble standards will also help drive the performance parameters for the respirators.

MR. MONTGOMERY: You know, I fully agree with Bill. And I was actually going to say pretty much the same -- in all the same thing.

And a lot of the requirements and issues I brought up in my presentation, some of those are nice to have and some of those are must. And some of those

things need to be, I think, researched further. A lot of it is anecdotal. There is some data behind some of those needs and requirements. But in order to really get a good parameter, a performance parameter put on those different needs, there probably need to be some more research to really get down to what is the cause of the issue and what is the real need for those.

Any special cautions, limitation identified -- again, I think we discussed a little bit of this. It's truly a training issue, especially when it comes down to understanding your equipment, understanding whatever input you have to change between the different modes, whether that be in automatic and knowing when it goes to automatic why it's doing that and what's going on, whether it's a sensor you carry and you have to manually do it yourself.

That's going to be a hurdle that's going to have to be -- going to have to be taken. And when it comes to a law enforcement community, over 80 percent of the community is less than 50 officers in a department. So when it comes to that and the funding

they get and it comes to training, it's a difficult issue. And I would hate to see something happen that it comes down to a training issue has caused an injury or a fatality as opposed to technology. So somehow I think we need to find a way of -- I may not say marrying those together, but having a good program put behind it if this comes through.

MR. SZALAJDA: Chief.

MR. RIVERA: Yeah. I would concur with the -- on the performance side. It's going to be specifically user based. The LE community is going to be entirely different than a standard state side fire department. And then if you go to military firefighters and combat operations, that's going to be fully different. So that's going to be a user base.

And on the special cautions and limitations, you're going to have a ton of those. And if you were to look at our -- and they're going to be driven by the manufacturer's lawyers. If you looked at our technical orders and user instructions, you're going to have cautions, air-purifying respirator cannot be used in IDLH environments, for example, because you

will die in there trying to use APR.

And then with the systems themselves, they are more complex so you, obviously, have a big training role. And that's true with any of our equipment, but training is a -- yeah, play a huge part.

MR. SZALAJDA: Thank you.

Any questions from our participants here in Pittsburgh on this subject or any comments that you would like to make on this subject?

MR. NELSON: Jon Nelson, Navy Protection.

This question is for Bill.

Bill, you mentioned the NIJ CBRN PP Air Ensemble standards in the LERL-1. And LERL-1 it states that the operator may make entry into an environment with a flash hazard.

In that flash hazard, is a 1981 certified SCBA appropriate for that environment, or if the mask is or will meet a 1981 standard, would that be appropriate?

MR. HASKELL: I think it was a bit -- if it met the 1981 standard, it would be appropriate.

MR. NELSON: Uh-huh.

MR. HASKELL: The 1981 standard now I believe has that preheat, and then it goes in front of a bank of propane burners for so many seconds, which I don't know what your thoughts are. But I don't think that is an overly arduous test to pass. It may be similar to the type of flash over or flash exposure you might see in drug lab explosion, you know. So I'm sort of on the fence as to how we characterize the fire hazard and explosion type scenarios that a law enforcement or a tactical officer needs to be protected against.

MR. NELSON: Okay. But would you recommend going down two different paths for a standard?

MR. HASKELL: When Dan made the comment today, Dan Rossos, and I was talking to Clint Kaller in the back about it, who's also on that committee of a proposal to actually consider splitting out the two. I think that sounds like a good path to explore.

MR. NELSON: Right.

MR. HASKELL: But I think we need to very carefully look at the performance criteria currently

in the NFPA 1981 standard, because I bet a vast majority of them may have application to both the fire service -- and we're saying emergency responder, but I'm thinking the tactical law enforcement community probably has a little bit even more unique than the general emergency responder community.

MR. NELSON: Right.

MR. HASKELL: And all the other issues of physical durability and drop and shock and vibration, you know, they're going to be commonalties there too.

MR. SZALAJDA: I think that's a very pertinent topic, and actually two slides away we talk a little bit about 1981 and we continue that. We can continue that as well.

MR. VALOSKI: All right. Mike Valoski from MSHA. We do a lot of work in mine emergencies and whatnot. And a lot of environments are tight, to say the least. It took me 25 years to be able to stand up in a cold mine.

Is there any thoughts about the size of these things and for mine rescue personnel to be able to crawl through tunnels?

MR. SZALAJDA: That's a good comment. I'll take -- I'll at least mention something up front and then let the panel weigh in.

You know, the size of these types of units is a consideration. And there are efforts underway, you know, in various forms to look at least reducing the profile for the SCBA. In particular, the IAFF has undertaken a project with DHS and others to look at a flat pack SCBA, which basically reduces that back profile of the SCBA system which is currently under evaluation.

I think with the development of these requirements from the standpoint of how we define the performance, you know, the technology needs to be -- the standard needs to be open enough that we can look at other technologies, as well as what we traditionally consider, like the SCBA and the evolutions with looking at how we change the cylinder.

You know, there may be other technologies similar to what NASA uses with regard to their propellant handlers ensemble, where they use a closed-circuit technology to provide for extended

duration type of operations. I think it will be similar to what, you know, we look at with the Closed-Circuit SCBA, you know.

And I think it's part of what we hope is a market driven type of activity where, if we define the performance requirements adequately, that the technology developers can look at that in relation to, well, my user community wants to have smaller, lighter packages and design equipment that way, you know.

And then I think, just to sum up, there are activities looking at the SCBA. But that's not to mention that others can't step up to the plate and look at making the technology smaller.

MR. HASKELL: I was just wondering if anyone knows between the mine environment and emergency services confined space rescue, if maybe they're some of the same issues as far as physical size and volume and such for the respirator?

I don't know.

MR. RIVERA: Size and weight are certainly an issue. But again, it comes down to user base issues and thinking about that 1981 standard. That

thing could really -- I think that's a real good idea to have potentially two different standards and one that addresses other users.

One of the changes on the 1500 committee that we're currently working, as the gentleman earlier addressed, a 30-minute, a 45-minute, 60-minute cylinders really doesn't mean anything. And we're getting away from that terminology with the current revision. And it's going to go to, you know, the volume of air that you have in an existing cylinder.

One thing, though, that -- which could in the firefighting business potentially drive an end to the use of 30-minute cylinders. However, we need to be careful in doing that type of thing because there may be applications where 30-minute cylinder remains appropriate.

So, for example, people doing the investigations at a WMD house and they're operating on APR. They don't need the hour cylinder, the 45-minute cylinder. They need some type of escape, whether that's 30 or even potentially smaller like we have with confined space units. So really, you know, as we

make the changes to the various standards, you need to be aware that there are many different users with different requirements.

MR. DUFFY: I'm Rich Duffy. I'm with the International Association of Firefighters, and for those who are unaware, the International Association of Firefighters is the labor unit and we represent about 297,000 men and women firefighters and emergency medical personnel.

Thanks for the little ad about the flat pack. I'm not here to talk about that, but I thank you about it. And in fact, that will be a project that's done. We have a March 31 deadline. Why it's been held up and why you haven't heard anything over the last two months, we're back in DOT for amended approval. And if you want to watch paint dry, go through the DOT approval system. And I'll leave that comment as it is.

Let my say right off the bat that we support work for a combination unit. I think there's a need for it. I think what we need to address in this discussion should be what is the operational use of

this?

And there's two areas that I can look at. One, it is an escape device when you run out of air, highly appropriate, highly needed. And by the way, I don't need to be lectured that there's lots of escape units that you can buy, put in our pocket right now. Because you know what, they've been around for a long time. No one has them in their pockets and no one is going to buy them and put them in their pockets.

But the fact if you have a device where that's included, that is certainly a need for it and clearly we can demonstrate over and over again would have saved firefighters' lives that ran out of air, whether they're in an IDLH atmosphere or a oxygen-deficient atmosphere, which I guess, you know, they won't help for. But certainly we believe that running out of air and having something to filter out through an APR or a PAPR would be a monumental benefit.

The second operation is use it as, you know, an operational tool, where you can go between -- in a SCBA and a PAPR, APR, clearly a need for that as well.

But I think that's what discussions are because there may be different parameters for each different device.

And I would also like people to remember that the 19 -- whether it's right, wrong, or indifferent, the law right now for the CBRN respirators, SCBAs require NFPA 1981 certification. So all the CBRN SCBAs are right there do have 1981 certification, regardless if they're used by firefighters, police, or transit workers; and I don't know, whoever else may be using it. They are required for that.

And perhaps, when we begin this discussion, we should also relook at the terminology that we're using for CBRN, because you know what, CBRN now is becoming a luxury out there in the real world and many jurisdictions are saying, hey, that's something that New York City has to worry about or Los Angeles has to worry about or Chicago worries about. It's really an all hazard device.

The new CBRN requirements made -- regardless what everyone may say, it made a better respirator. And clearly, the changes that were made to meet the

must heard siren issues made it a better respirator for all -- all things that you'd be wearing that respirator for.

But back on the subject. I think the operation user is clearly important as a rescue unit which should be out there tomorrow or this afternoon, clearly for that. And then whether if we can have an operations -- and I clearly believe that there is a need for and a use in the fire service, and I only speak for the fire service, for a non-SCBA respirator out there. Because the choice is either wearing an SCBA or wearing nothing right now. And the case is we're all too often wearing nothing so -- so I'm here for supporting it. And I appreciate the discussion, and thanks a lot.

MR. SZALAJDA: All right. Thank you, Rich.

Any other comments on that from our panel?

MR. FINEGAN: Hi. I'm Bill Finegan. And while I am retired Philly Fire and Rescue, I am certified as a paramedic, and that's where I spent the vast majority of my career. And I respect NIJ. I got a lot of respect for the fire service. I noticed that

in this discussion my mission, emergency medical services, isn't being addressed.

And when you look at the plausible worse case scenario, credible threat of WMD, the primary end of any of those devices is to terrorize people. So we can talk hot zone, warzone, cold zone all we want. The fact of the matter is anytime USA municipal stadium gets hit with whatever, it is 10,000 people are going to have to come out of that facility and 10,000 people are going to have to get triaged. And if you can triage them before you do your DECON, it makes everything a whole lot easier.

I just put it out there that the EMS mission should be addressed in 1981 and by the NIJ standards. Thank you.

MR. SZALAJDA: Good comment. Thank you.

MR. RIVERA: To that -- in 1500, we addressed on the EMS side respiratory protection, but I think your point is real good. And with the 1500 currently under revision, that might be something that you would want to insert as a public comment.

We do talk -- when we talk respiratory

protection for the EMS user, it's basically focused on a traditional person with some type of disease and not so much directed to the attack. When it comes to the chem bio attack, we're kind of fire centric.

And, of course, in the fire business, the EMS is our bread and butter pretty much worldwide now. So very important.

MR. ANAYA: Hi. My name is Chris Anaya with Metro Fire Sacramento. I have more of a question or, I guess, comment regarding the discussion, the topics listed up there. And it applies not just to CRUs, but CBRN in general.

In Sacramento should we have, let's say, a dirty bomb event down at the Capitol, we would -- of course, for our SCBAs initially, and probably switch over to our negative pressure APRs with a CBRN cartridge attached. But we have Cap 1 cartridges and, you know, the rating is 10 minutes.

The challenge -- the test criteria for that was 10 minutes, I believe. And it's hard to translate that into a lower dose atmosphere, a less concentrated atmosphere than a test atmosphere.

And I've always wondered, well, how long do they really last because they're rated for 10 minutes. Surely they'll last longer than that in an environment that's not as concentrated. But there's no way of knowing when that end of life for that cartridge ends.

So I was wondering with the combination unit, I would assume that you have to have something like that, so somebody could either switch back to a bottle or to get out of the hot zone, something. Because it's really -- I think it's guesswork unless there's some material that I missed.

How would a user know when you're having a bypass through your cartridge in this environment? I really don't know.

MR. SZALAJDA: And actually that's a very good -- very good comment, Chris.

And I think I have a couple of things to address on that. I think one, it's -- you know, when we looked and we developed the CBRN canisters, so the protections for the canisters. We took the approach -- and you'll see it with not just the CBRN products, but as we move forward with other things --

that we're going through a capacity identifying things by how much capacity that the respirator or that the particular function, whether it's the cylinder or canister. You know, whatever the mode is, how much capacity does that component have to afford protection?

And in doing the research behind the test times, we looked to establish certain minimum levels of capacity and the Cap 1 is a test time of 15 minutes; that when we do the gas -- when we do the gas and vapor testing for certification, the test are limited to 15 minutes. And by doing that, we establish a minimum performance capacity for that canister. You know, and then it falls back to -- and it's not necessarily a good answer for your question, but the answer is it goes back to -- it depends on you using the industrial hygiene tools available for you to do monitoring and identifying the concentration in that to determine based on knowing what the capacity is, how long you can use that particular device for.

Because we know at least with regard to some of the testing and some of the TRAs, that some of

these canisters will last for hours, days, you know, depending on what the challenge is.

And so part of it becomes the tool that we need to do, and then, I think, in terms of how we develop guidance is to make products available to you as the user to be able to address how long do these things happen.

NIOSH has developed some tools to try to look at that, you know, through our research program. There's a service -- a thing called MultiVapor, and another tool which help with identifying the change out schedules associated with the use of the canister against different types of hazards.

MR. ANAYA: Isn't that available for free?

MR. SZALAJDA: Yeah. And it's available for free. And it's available either through the NIOSH or the NPPTL website or the OSHA website.

Another aspect of that, and I think it ties into some of the research that we do at NPPTL and that others are undertaking, is looking at the end of service life indicator for cartridges and canisters.

And last week at the TSWG -- and I'll

butcher his name so I won't say it, but he -- there was a presentation given with regard to looking at color metrics that could be added to the outside of the canister to give you an indication where this is going with regard to how much useful life is left in your canister with regard to dealing with the challenge that you're facing.

And I think one of things that we're looking at seriously is part of our PAPR requirement in this whole -- and it's all incestuously interrelated with regard to our standards development portfolio, is one of the things we are seriously considering incorporating with our powered air-purifying standard in the future is the mandatory use of and the service life indicators. And that's one of the questions that we're going to put out to the community as part of the advance notice to determine, engage where technology is with regard to how an end of service life indicator can be applied to a PAPR. And that opens the -- when you look at this type of device, that opens a forefront to being able to incorporate that type of technology and make it into products for the user

community to have to help in dealing with these things.

You know, and I think with -- this is kind of a long-winded discussion. But you kind of get an appreciation of how -- you know, with the regulatory agenda how important the pieces all fall together.

And one of the things that we appreciate as a result of the public comments that we got with regard to the things that we were doing from a regulatory standpoint is the linkage considerations between the standards.

And so I think, you know, there are things that we can do now -- and this is a long answer to a very easy question, but I hope you'll bear with me on it. But I think, you know, there's things that we can do, you know, as a safety and health organization to develop and promote guidance to help make your selection and use criteria either. And we're in the process of developing several products for CBRN respirator selection use maintenance and guidance to try to help answer those types of questions. Your raising the issue here, you know, increases that level

of awareness.

The other aspect of that is I think by you making that type of comment it also lets our industry stakeholders know that this is a concern, you know, at least with regard the application. And those are things that we can jointly deal with to address it through the development of the standards.

Any comments from the panel?

MR. RIVERA: Well, those -- obviously, we have different standards then. I don't know if the engineers in the room want to speak to it. But the filters perform well. And a lot of that guidance is published that the manufacturers have that would let you know. But again, you wouldn't have the actual indicator with you. You would just have a given guidance that they could publish.

MR. ANAYA: A couple of follow-up.

MR. SZALAJDA: Okay.

MR. ANAYA: One of the difficulties I foresee is the fact that air monitoring is great, but what are you monitoring for? What constituents? What's your threat?

And then, of course, personal monitors in terms of radiation. Well, everybody will have a cylinder with them for Gamma. But that's just one specific item.

We can have area monitors spread around. But you're going to have some of the chemicals of the constituents could be transient. They could have high dose and with the wind currents. I mean, so you're going to be limited to really know what concentrations you have.

You can have microclimates, winds around the building. You'll have at east (phonetic) of air pockets. It will move in different directions, depends where somebody is working so -- and it's impossible, you know, with a four or five gas monitor to really know what you have other than to tell you how much oxygen you have in the air and maybe CO, hydrogen sulfide, perhaps, a flammable range. But that's pretty much it. It doesn't really -- it won't tell you anything else.

And so depending on what's involved, what's being released, it's a crap shoot. It really is. You

take your best guess what was done, of course -- I guess that's part of the problem. It's really a gray area for me. And I need to learn more about this stuff, obviously, because I didn't know there were even documents out there. But it's just something I personally have struggled with myself.

MR. SZALAJDA: I think it's a good comment, Chris. And I'm sure you're not the only one who has these topics. But I think I heard a couple things out of your discussion and it follows-up on a point that Bob Sell had made earlier. And the discussion is about the need for detection capabilities and whether we look at detection capabilities as part of integrating it into this apparatus or if there are other ways that need to be able to address that. And also the whole concept about know technologically what's currently available, you know, that can be provided to the response community in this item.

You know, I would -- personally I would think at a minimum we would need some sort of oxygen sensor with this type of technology so that you know you can be in one environment or another. But there

are others that need to be considered.

So with that, I think what I'd like to do is check LiveMeeting and see if we have anything on LiveMeeting on this subject.

Yeah. Well, a little bit of a lag here.

Are there any comments or questions on the discussion as far as performance parameters from LiveMeeting?

MR. NEWCOMB: Jon --

MR. SZALAJDA: Yes.

MR. NEWCOMB: -- this is Bill Newcomb with NIOSH.

I'd like to make a comment using the ISO administration hat in the fact that a lot of the things that we're talking about here and whether it's NIOSH present revisions to 42 CFR 84 or things that are being talked about in 1981 standard or other standards are being considered in the ISO arena and the act that's being taken is to design performance requirements around the needs of the user, rather than the products. And we have had input -- a lot of input -- from the fire service, but no input from

Justice at all in trying to come up with some requirements for products.

The way the classification of the ISO standard is proposed would allow one to have, for instance, an SCBA which has basic performance requirements. It may have different work rate requirements and different protection levels.

If you need a CBRN, that's a specific application and there are certain requirements that would be added on for CBRN. If you need structural firefighting, there are certain additions that would be put on for structural firefighting.

If you have Marine offshore firefighting, there are different requirements. For mining, there are different requirements. Because, for instance, the vibration that is seen in mines is much different than the vibration that might be seen on the back of a fire truck.

So I think that the people should be aware of what's going on and I would like to put a plug in for anybody that would like to be a member of the ISO U.S. Technical Advisory Committee, that we welcome

users. We don't have enough of them, which is usual on standards writing committees. And if anybody wants to participate or give us their input, the secretary is the International Safety Equipment Association, ISEA. And they will be glad to give people the opportunity to join us in writing the standards of the future. Thank you.

MR. SZALAJDA: Thank you, Bill. And I don't mind the shameless plug, but the --

I think, again, it goes back to the point I made about, you know, you can kind of understand the complexity and the interrelationship between, you know, trying to use and adopt, where appropriate, international and national concensus standards and again Brian's participation here today to reflect some of the law enforcement needs in opening that -- you know, that channel, I think, only serves to improve the quality of the product.

Any other comments from LiveMeeting?

No?

Social media?

MS. POWELL: Jon, the CDC e-mail is down.

MR. SZALAJDA: CDC e-mail is down. Okay.

Well, then we'll go ahead and move. There's two more topics between now and lunch. So we'll march through those here.

Earlier we had heard a comment from Dave Spelce regarding the relationship with OSHA, the 1910 120 standard. And part of what we would like the community to help us identify is government and consensus standards that need to be addressed regarding the use of Combination Respirator Units and also how we identify the requirements.

Are new requirements needed to address the added capabilities, or can we exist or look at existing provisions to modify or eliminate because of new technologies?

So I think we'll start with Bill again and work down the panel and then we'll open it up for comments.

MR. HASKELL: Well, seems like one of them is the OSHA standard that requires that the combination unit will actually be rated at the lowest level of -- the lowest mode of operation.

MR. SZALAJDA: Well, there would be, I guess -- and I'd have to -- I was trying to take notes so I can ensure that the assigned protection is appropriate for each level. So whether or not that will have to be an evaluation criteria, we'd have to determine. Bill.

MR. HASKELL: I don't really have any additional comments. I think we've already talked about the government standards and the concensus standards, and I have nothing else to share right now.

MR. SZALAJDA: Okay. Brian.

MR. MONTGOMERY: No. I'm about the same there, Bill.

Just to go back to what you said earlier about being a -- part as a system, if we are starting to have operational standards come out what happens to be, the overall protection of the system needs to be coordinated between those standards to make sure we don't have a piece that's not protective enough or overly protective; it's not needed. So I think we need to make sure that when we do this, that we look at those.

MR. RIVERA: And I believe the OSHA standard that Bill mentioned or any other standard that would preclude the use of the system in the way the user needs to use it.

MR. SZALAJDA: And I want, at least -- and then we'll take comments. At least one of the things that struck me last week at the TSWG Conference was when you look at PPE in general, there really is a systems need and I think -- I'm hopeful to address the development of this technology.

The examples that I have are related to, well, the SCBA, you know, in relation to the use in the firefighter ensemble, that we're looking at requirements for the SCBA to make it more compatible with the protection, the heat and flame protection that's afforded in the ensemble that their test is completely different criteria with regard to heat and flame.

And that creates a disconnect where we see the facepieces may fail or have failed in application. You know, several presentations that come up at TSWG was with regard to the increase in head injuries, you

know, for service members coming back from the wars. And the fact that, you know, I guess we call it pulmonary protection; the body armor, the other parts of their ensemble are doing such a good job in protecting them that we're now seeing an increase in head injuries as a result of maybe the helmet not affording the same degree of protection to them as other parts of the ensemble. Whereas, in the past these guys would have been casualties, you know, and wouldn't have come home.

And now, you know, looking at them as a system, you know, you're able to identify the weak performance aspects of them as an ensemble or them as a system. And I think that's, you know, in looking at a system's approach for this particular piece of equipment, I think, is going to be very important, not only from the standpoint of the piece of equipment itself, but also it's interrelationship with how it's going to be used in the user community.

MR. DUFFY: Rich Duffy again, Firefighters. First of all, I'm just going to repeat myself. But I think it's important for the record.

We clearly believe that you need all the CRUs meet the CBRN requirements. But I think as I said before, this also gives us the opportunity to address what CBR really means.

And I'm telling you right now that everybody out in the field that CBRN means terrorism. It doesn't mean a little hazardous. So it clearly has to be addressed.

I also think this is an opportunity to think outside the box, and I think everybody's vision here right now, and even the slides if you've seen them, units that we're well aware about are basically taking an SCBA and sticking an APR or a PAPR on it, that we know of today. And it's time to think there may be a different unit out there. We certainly need to look at our friends in the mining industry how they have changed some of their filtering devices that are smaller, that don't look like respirators that we know of today and the possibility of utilizing or incorporating them in any CRUs out there.

So I don't think this is just an opportunity to get it out to the marketplace real quick by

sticking one of your APRs on your SCBA. But it's time to change that technology that's out there. And there is technology that exist that people need to consider for the CRUs and, perhaps, they need to be part of the standard as well.

We don't need to add lots of weight. We don't need a lot. And profile is important to us for entanglement hazards, which we really don't address in any PPE very well. And I think that needs to be looked at as well. So outside the box is clearly an opportunity right there and certainly the CBRN industry. And I don't know if people -- and I don't know. I can't remember what I said a while ago, so I'll say it again. People are aware, but you talked -- one of the speakers this morning talked about DHS funding or FEMA funding. And people need to be aware that the only federal funds allowed for purchasing SCBA are SCBAs that meet CBRN standard.

So you are -- communities are restricted to only buying CBRN approved certified respirators using any of the funds. It is on the approved equipment list, and only those that meet the CBRN requirements

are on that list. Thanks.

MR. SZALAJDA: Thank you, Rich.

Any comments from the panel?

MR. NELSON: Jon, you mentioned systems approvals, and in Brian's presentation this morning he mentioned hydration.

In addition to that, I was also at TSWG last week and hydration for the firefighter, as well as the first responder and all first responders was a huge topic last week as far as respiration rates, rehydration, dehydration, and firefighter performance were some of the studies that have been classified and brought forward.

And as we look in going to a systems approach where you have the integration of PPE, be it bunker gear or a NFPA 1994, 1991 suit and then integration of hydration to that, what is NIOSH's position as we move forward into the future in the three or five year plan to certify complete ensembles as systems?

MR. SZALAJDA: Good question.

I'll give you my perspective on the complete

system first.

The approach that we've taken, you know, with regard to respiratory protective devices is that we will -- and this is in relation to the NFPA 1991, '94 suite of suits is that we'll evaluate the impact of the ensemble in regulation to whether it impacts the ability of the respirator to provide for the performance that it's supposed to.

And I think, for example, one of the things that we're doing as a research project this year is that we've gone out and we've procured the suite of approved products; the APRs, the SCBAs, the PAPRs along with all the ensembles. And we're going to go through a process of evaluating -- of doing a systems evaluation of how well the devices interface with each other.

The fact that I'm looking to develop our regulatory agenda is to try to move the identification of the standards to reflect the respirator performance for the devices. And we appreciate and acknowledge, you know, there does need to be interoperability and compatibility with the other

aspects of the PPE. But we don't necessarily either have the capability or the mandate to do that, that type of operation.

Yeah. So I think from a standards development standpoint, we would be looking to ASTM, looking to NFPA or ANSI to develop those types of standards criteria to fill the gap, you know, to allow and address and look at the integration issues so that the ensemble with the respirator as part of the ensemble it can be evaluated as a system.

But when you look at the current mandate that we have for NIOSH, we're focused on respiratory protection that's, you know, what -- when you look at the legislative and the regulatory mandate, you know we certify respirators. We don't certify everything else that goes with it. So we would look to other standards to fill that gap.

I hope that addresses the question.

MR. MONTGOMERY: If we continue down this operational standards path with using operational needs for the test methods for the various communities, I see there's a primary health and life

issue and that your breathing, pulmonary, hydration would fall under that.

Then there's secondary. And that would be your situational awareness. That's communication, field of vision, those types of things.

Maybe sometime down the line in the future we would be able to incorporate all of those. But I think initially we need to start looking at those primary pieces that without those you're going to have a bad day basically, so what.

I can see where that's definitely a need. I just don't know where it fits.

MR. SZALAJDA: That's a good point. I would go back to -- I think in the slides this morning, I had shown the recent NAS study looking at the certification of personal protective technologies and it's been a few weeks since I've looked through that, and it's not as clear as it should be.

But I think it recognize that NIOSH has a role to play, you know, with regard to providing leadership to get this done, but not necessarily from the standpoint of working in the context of what we do

to protect workers, you know, doing research and conducting activities to protect worker safety and health, not necessarily that it's our congressional mandate to certify those types of respirator technologies or PPT technologies, but to provide some leadership to identify ways of being able to get that done.

And again, I think I would encourage, you know, you guys. It's free -- it's free on line, to download versus buying a hard copy. But I think I would encourage all the participants to take a look at that and then maybe, you know, when we get together the next time to talk about our regulatory agenda that we can continue that conversation.

MR. FARLOW: Pete Farlow from the Edgewood Chemical Biological Center.

Just here to touch on the operational requirements that Brian had talked about earlier.

There's been a lot of effort in a lot of areas that he touched upon. And I think one of the problems is we don't have a venue to know what the end user is looking for -- other than his presentation

recently -- and we'd like to be able to prioritize some of those needs. Because there's been a lot of work done with areas, such as hearing attenuation, speech intelligibility, the mass properties that affect the ensemble, acoustic signatures, how people can hear things and speak about things.

A lot of information, a lot of reports out. And I just worry that sometimes we actually rush to get the standards done.

The NIJ standard that's out for the ensemble has come back to us now and asked to verify the acoustic signature requirement that's in there. So it's kind of like I just hate to see the cart sometimes get before the horse.

So there is a lot of information out there, not just an itsy-bitsy, but lately I've been kind of digging up some other information from other organizations that were doing the same type of work and now we're trying to get collaborative efforts together.

So there is a lot of operational issues for all the different responding end users. And, you

know, I don't know how we can get all that information together. But things like this -- you giving us this forum, Jon -- is very good. And there is a lot of information. So I'd be willing to share that with anyone. Thank you.

MR. SZALAJDA: Thank you, Pete.

MR. MONTGOMERY: That's one of the interesting pieces about the work I do is we try to support over 18,000 law enforcement agencies and 3,000 correctional agencies and to try to get the requirements from all those entities is difficult.

When you have the military structure, they gather their requirements. They have a procurement strategy. They're able to make their purchasing through -- mass of purchasing through contracts and able to very specifically say what they want.

When you come out to the law enforcement community, they each have their own procurement strategies. They each have their own procurement methods. They each have their own way of writing up their contracts and getting their requirements. So it comes to actually getting law enforcement requirements

as a general topic. It can be difficult. Because when you go to different regions of the country and different operations and different concepts of operation, each of them have their own flavor of what they want and what they need to do.

So you can capture some of the high level pieces of that. But when you get really down and deep to the integral parts of -- for example, let's take an alarm. You may have a unit that says I want vibratory alarm and some that say no, I don't want that. I want something else. So to make that a requirement to be a specific type wouldn't be useful in this area. But they all do agree it has to be inaudible.

So it's a difficult situation for us on my side of the house with the law enforcement community, because we don't have a lot of the entities that a lot of the other communities have, such as an NFPA and other groups that do speak for their community.

MR. SZALAJDA: John, do we have anybody on LiveMeeting?

MR. PERROTTE: Sounds like it, yes. Hold on a minute.

MR. SZALAJDA: Okay. For this particular topic, do we have any comments from the LiveMeeting audience? Okay.

And still down?

MS. POWELL: Still down.

MR. SZALAJDA: Okay. And the last discussion is related and we've touched on it already with regard to the NFPA 1981 standard and the interrelationship with the NIOSH CBRN approval. And Rich and others have -- Rich Duffy and others have articulated this.

And just a little bit of history when you look back at why we did this. I think, you know, for CBRN we established tiers of requirements, tiers of performance requirements. And part of that was to base one off of Part 84 and try to use the respirator performance requirements in Part 84. But we also realized and recognized that because of the threat, we needed to augment the protections that were identified in Part 84. So we looked at national and international standards.

And in the evaluation of NFPA 1981, that

identified unique performance capabilities, what we felt were critical to the performance of the SCBA in dealing with a CBRN type of environment.

And in 2010, it was damn convenient because the standard was there and we adopted it in its entirety because it did exactly what we needed it to do at the time and also allowed us to get a standard out in a timely fashion. And then the warfare test were added on top of that.

In -- over time, you know, like with anything else, you know, the standard has been used and people have bought equipment. You know, we see there is potentially a need, and it's been articulated already about being able to address other aspects of the responder community, law enforcement, EMS, you know, to be able to have this product tailored to meet their needs.

You know, and I think in part of what we looked at with regard to the definition of the CBRN requirements, what we call CBRN for this, the CRU, they're very well-defined. We know how the SCBA should perform. We know how the PAPR, the

Air-Purifying Respirator should perform.

We've identified performance requirements for Closed-Circuit SCBA. The CBRN part is there, you know, and I think it's the aspect of, you know, tailoring and being able to address conformance issues with the other aspects with the human factors and the endurance and the environmental considerations that we subject the CBRN respirators to, what's important to transition into this type of product. And that led to the slide, at least in terms of how we adopt and bring in that extra tier of requirements.

And I will say this -- and I have to give a lot of credit to the NFPA on this, with the adoption of the CBRN requirements that really prior to the identification of CBRN, we didn't test CBAs against chemical -- the effects of any chemicals, at least not that I'm aware of, you know.

And the CBRN criteria by introducing that criteria into their standard was a huge step forward because now we had identified performance requirements, which identified penetration and permeation aspects that the respirator had to protect

against.

Then when you look at Saran and GB, there aren't very many materials out there which are not only designed to be, you know, personnel defeating, but also equipment defeating. And I think that was a big step forward, you know, a leap of faith on NFPA's behalf as well, in pulling that aspect and making it into a mandatory part of the 1981 standard.

And I think it's crucial, you know, in how we evolve the CRU standard to be able to maintain that interlinkage between, you know, the requirements of 1981 as well as what NIOSH requires for CBRN approval.

So with that, I'll open it up and start with Bill.

MR. HASKELL: Yeah. I have a comment on the second bullet, other types of CBRN respirators do not require NFPA 1981 conformance. And 1981 is self-contained breathing apparatus standard. But the present, NFPA does not have standards for APR or PAPRs. But now NFPA is starting to go down the road to develop a standard for high flow rate Powered Air-Purifying Respirators. And I would envision that

in the future, perhaps, you will have a PAPR requirement that would require both the NFPA high flow rate PAPR and the NIOSH 42, Part 84 and CBRN all compiled into one.

So I'm thinking that down the road you're going to see the same type of model for PAPRs that you do now with CBRN and NFPA 1981 for self-contained breathing apparatus.

And I think a lot of the performance requirements in 1981 for durability and shock and vibration and heat and all the other things will have to be revisited for the NFPA PAPR standard. And I think everyone needs to be involved with that to make sure that's done in a logical process.

MR. MONTGOMERY: I guess my answer to this question is maybe. It goes back to whatever the intent of the test is. What are we testing the equipment against, and why it is being tested that way?

But a couple of standard efforts I've worked with, we looked at doing a salt spray test. So the question came back why are we doing it. Are we doing

it for Maritime Salt Water Operations, that they may get a little bit of salt water on the equipment, or is it to check the corrosiveness of some of the materials to check to see if that material is going to last or not?

So if we know what the intent of the test is and what threat we're testing against, then we can make a determination as to which pieces comes in -- and which should and shouldn't be there for the different communities.

MR. RIVERA: From -- again, I think it will be user and performance base. So from a fire perspective, yes, we would need to meet NFPA 1981 requirements. And then if the new 1981 capture all other users, LE community and others, still, though, those new special operations type of requirements that we have identified and that we use with our current APR, PAPR, and NSCBA combination unit, we would want to retain those and meet the NFPA standard.

MR. SZALAJDA: Do we have any comments from the audience here in Pittsburgh on this topic?

You're all ready for lunch.

Any comments from LiveMeeting?

MR. PERROTTE: Let me on --

MR. SZALAJDA: Okay.

Okay. Do we have any comments from LiveMeeting participants about the use of NFPA 1981?

MR. SPELCE: This is Dave Spelce, Navy and Marine Corps Public Health Center. I don't have a comment on that. But would it be appropriate to make a comment on the nomenclature of the CBRN Combination Respirator Unit?

MR. SZALAJDA: Go ahead.

MR. SPELCE: Just recommend dropping the word "unit" and call them "NIOSH CBRN combination respirators." By analogy, Combination Supplied Air SCBA respirators are not called Combination Supplied Air SCBA Respirator Units.

MR. SZALAJDA: Thank you, Dave.

MR. SPELCE: Thank you.

MR. SZALAJDA: Anything else from LiveMeeting?

Social media?

MS. POWELL: No questions.

MR. SZALAJDA: No questions. All right.

And I think what I'd like to do is, at least for now, if there are any comments regarding the combination respirator requirements that you'd like to address that we haven't covered, if you can bring them forward now.

Okay. And what I'd like to do is, you know, first, here's your information docket and how you submit comments with regard to what you've heard. And then the things that you would like us to consider with regard to the development of the standard.

I'd also like to thank Bill Haskell, Brian Montgomery, and Chief Rivera for participating in the panel. And I hope this type of discussion has been helpful for you, not only from, you know, an industry perspective, but also a user perspective on needs for this type of device. And I'd like to thank you all for your participation and comments.

So with that, I'd like to give my panel a round of applause.

I've gotten signs from the back of the room that the box lunches have arrived. Again, it's cash

only, $12. I believe it's out here in the back. You also have some options before you get to the terminal and also the hotel.

So what we'll do is we'll break and we'll reconvene and start promptly at 1:30 with buddy-breathing. Thank you.

(A luncheon break was taken at 12:20 p.m.)

AFTERNOON SESSION

2:38 p.m.

MR. SZALAJDA: All right. Thank you. We are going to go ahead and resume. I think we've got our additional presentations loaded into the computer.

This afternoon just a little bit of a couple housekeeping type things. During the lunch break, Charlene provided the different chairs -- the survey for the meeting. If you can please complete that. If you do decide to bug out early, if you can drop that off to her on your way out.

Also, if you want to recycle your badges, you know, in the hopes that you decide you liked us so much you'd like to come to the meeting again, we can save the badges and recycle it as part of our "being green" initiatives.

From that standpoint, I also wanted to add at least when we're finished with the buddy portion -- buddy-breathing portion of this afternoon's agenda, I have a couple wrap-up comments. But I also wanted to allow the opportunity, sort of a last call opportunity, for anybody that wanted to make a comment

with regard to any of the things that we've talked about today, and we'll do that right at the end of the session before we close the meeting.

And so with that, I want to provide at least a little bit of an overview why we're having a buddy-breathing discussion this afternoon. And from the standpoint that is not a regulation per se, it is not something that we address as part of 42 CFR Part 84. But it is something that my predecessors did years ago with regard to identifying a policy regarding the use of this type of technology and the application to self-contained breathing apparatus.

So the format we're going to follow is very similar to what we did with the combination respirators. I'm going to have a little bit of an overview. I'm going to keep my comments brief, because I'd rather let you hear the perspective from the people that are interested in the topic.

They'll give a presentation with regard to some of the issues and things that they feel are pertinent to helping NIOSH relook the policy that's been in place. Similarly, we'll have a panel

discussion. There will be questions to help us lead the panel discussion, and then we'll also have a comment period.

So my objectives are pretty brief. And basically this is a reevaluation of a policy that was developed in 1984. In going back and looking at some of the history, you know, at the benefit of granted it is 26 years ago, and I was a happy young person at the Aberdeen Proving Ground, you know, working on DECON and didn't even know NIOSH existed when this policy was put in place. But there was a process that NIOSH had gone through at that time.

And there is some limited documentation that we had in our archives where, in the June time frame of 1984, NIOSH went out and sought opinion from stakeholders through a letter to interested parties on the topic of buddy-breathing of, you know, the potential being able to share air between systems.

I don't know -- could not find a record of what the responses were to that letter. However, there was a follow on letter issued in November of 1984, which says this -- that you can't read. But it

is in the docket and you can look at the letters that were transmitted.

But basically, in kind of paraphrasing it, NIOSH's policy that was established is that, you know, any use of emergency breathing systems or buddy-breathing type systems would invalidate the NIOSH approval of those types of devices.

And the thing to keep in mind when you look from a historical perspective with regard to this topic is I think one of the things that's pertinent to consider is the evolution and technology.

And I've made a comment that, you know, when you look from a functional standpoint, what's changed in the last 10, 20, 30 years, there's always been respirators. But the degree of technological evolution is readily apparent in what you see in the different products that, you know, an SCBA of 1980 is not the SCBA of 2010, you know, that we have marketed -- you know, we have moved the bar forward with regard to the capabilities of the respirators.

So we're going to be looking, you know, for input from our stakeholders with regard to these

topics. And these will be what we use to facilitate our discussion when we have the panel discussion later on this afternoon.

Well, at least a little bit of a background and I think it's kind of unique, at least, with regard to how we're going to broach our support presentations today.

Dan Rossos, who you had heard this morning from Portland Fire, is going to introduce the topic to us this afternoon from the NFPA perspective. And they raised concern -- Dan raised a concern to Les Boord, who's the TCC Chairman for NFPA, on the subject because there were several issues which, you know, basically focused around including requirements, performance requirement and fire service standards would result in the use of noncompliant equipment.

And that was a concern for Dan, and that was shared through the NFPA channels. And it came to us, you know, at least with regard to looking at the policy; is the policy still valid, you know, at least with regard to how this type of device may be used in the work place today.

There's varying positions on the topic. And again, I don't want to spend a lot of time on this, because if you go and look at the information that's in the docket, these next couple of slides are captured there. But the OSHA regulation for the Fire Brigade Standard says, you know, we don't care what NIOSH says. You know, if you need to use buddy-breathing, do buddy-breathing. Now, they don't necessarily say we don't care what NIOSH says. But it does open the avenue for the use of this type of technology.

Now, however, though, even within the NFPA standard, there are concerns, different -- in the NFPA standards, there are concerns that are raised with regard to buddy-breathing operations, primarily in relation to, you know, putting individuals at jeopardy.

And I think basically if you go back and you look at it from the NIOSH perspective, I can only hypothesize that that's probably the concern that the NIOSH staff felt at the time is that by doing this you potentially not only risk the individual that needs

help, you also risk the individual that's trying to provide help.

And again, additional topics. There are additional comments from the NFPA standard with regard to concerns over the potential for buddy-breathing.

I did want to mention going forward that this has been very unique for me from, you know, having done this for several years now in establishing the docket that with this particular topic, this is the first time we ever had docket submittals prior to having a public meeting, at least with regard to the things for us to consider.

And we've had 10 comments to the docket already from the fire service. Six were against buddy-breathing that they said, "We think NIOSH and NFPA got it right." And the others are saying, "Well, you know, this is something that should be seriously considered as a way to, you know, help individuals that are in distress."

So again, as we go forward with this, the presentations that you're going to hear here in the next couple of minutes will be available on line as

well as ultimately all -- as the docket office gets the comments, those comments are posted as well. And you can go and review those if you so desire.

So with that, what I would like to do -- Dan Rossos --

John, you'll have to take the LiveMeeting -- or put the LiveMeeting back on.

Okay. I think what I wanted to do is introduce Dan Rossos from Portland, and he was going to provide an overview from the Respiratory Protection Technical Committee perspective and the need to address this. And then these individuals to my left -- Clint Kaller, William Flint, and Deborah Crisher -- will be providing different perspectives on buddy-breathing and information for us to consider with the deliberations.

What I'd like to do is let them go forward, go through their presentation. We'll take a break. They brought in hardware, which they'll talk about, that's up here on the table in front of us. And during the break, you'll have an opportunity to look at the hardware and have interaction with them. And

then also as part of the panel discussion, we may want to illustrate some points, you know, associated with the hardware that's available.

So with that, Dan, if you're on line, I'd like you to go ahead and introduce the topic.

MR. ROSSOS: Thank you very much, Jon.

Yes. My name is Dan Rossos. I appreciate the opportunity to be here today. And you know, I guess I need to say I appreciate the fact that we are where we're at regarding this issues. This has been an issue that has been a battle for me, and I am just so -- (inaudible) -- that we're at the place we're at and we're going to deal with it.

This initially -- and first, I have to say that my point here is basically to walk us through a little bit of the history of it, and Jon's already done that to some degree. But I wanted to bring us from where this initiated, where we came up initially with this as a conflict and to where we're at today.

So to bring us backwards a little bit. Back about 1980, 1999 when we were working in the 1981 standard for 2002, we had written a proposal basically

for a device or a fitting that would be a part of the SCBA that would allow us to deliver high pressure air from an outside source to a down firefighter or a firefighter in need of air. Ultimately that has come to be known the RIC UAC.

I was quite surprised at the reaction I had when I made that proposal back at that time. Quite a passionate argument developed regarding the conflict between what I was proposing as this RIC UAC and the similarity or the misuse, I guess, if you will, or the potential misuse of it as a buddy-breather.

Quite honestly, at the time I didn't know there was a problem with buddy-breathing. I'd been on the fire service for about 20 years at that time. And I didn't know there was an issue. But it became such an issue that, in fact, part of the preamble for 1981 for the 2002 edition was added in this, so it made it very, very clear. And if you don't mind, I'll just read it very, very briefly.

If the RIC UAC does not take breathing air from the SCBA being worn by a member of the rescue operation, but replenishes the victim's air, a

victim's breathing air cylinder from a source of rescue breathing; that is a rescue breathing air cylinder, a high pressure breathing air supply line.

The RIC UAC is not a buddy-breathing device. It does not permit the sharing of a single SCBA breathing air source between two persons. NIOSH does not permit or certify any buddy-breathing system that allows two users to share a single breathing air source. Because NFPA 1981 requires NIOSH certification as a prerequisite to become certified as compliant with NFPA 1981. NFPA cannot submit buddy-breathing systems, which would be in violation of NIOSH regulation.

At the time, I remember thinking this is a pretty big deal. This buddy-breathing thing is a pretty big deal regarding NIOSH and regarding the relationship with NFPA.

And clearly, this statement made in the preamble made a clear line in the sand that we were not going to cross that. In my mind as a firefighter, I realize this is going on all the time. And I didn't quite understand that it was a -- at the time kind of

"wink wink" type of thing. I just thought it was a straight-up deal. But this made it clear to me that there was a conflict.

I went back then. I started researching -- Jon, as you brought up -- and I made it known to the committee the letter, as you stated, in November 6th of 1984. And I found that in the archives, because I was trying to figure out when did this occur and why did it occur. And as you clearly stated --

You're still there, Jon?

MR. SZALAJDA: Yeah. We're still here, Dan. I guess there was some feedback in the system somewhere. But you're okay now.

MR. ROSSOS: Okey-doke.

As I said, I went back in the archives to find out what the cause was and what the real prohibition was. And as you mentioned, it was in November 6th of 1984.

And without reading this whole letter, it made it very, very clear that what NIOSH was talking about at the time was component connections, interfaces, assemblies in combination.

So it made it very, very clear that it was making sure that there was nothing we could have on the SCBA that would allow one SCBA to be used with another SCBA, for the intent of supplying air and approach your buddy-breather.

So that made it very, very clear that, in fact, NIOSH had prohibited this method or device from interfacing. So that made it clear why the preamble was developed and why the passionate argument was made back in '99, 2000 regarding a RIC UAC.

I then found, as you mentioned, Jon, the OSHA issue, and that was on OSHA 1910.156(f)(1)(iii), where it basically says, "Approved self-contained breathing apparatus may be equipped with either a buddy-breathing device or a quick disconnect valve, even if these devices are not certified by NIOSH."

Well, I thought my goodness; OSHA is clearly making a statement in full knowledge of the prohibition that NIOSH had came up with in 1984.

The issue that really became, I guess, the crux that made me have to bring this thing forward was that 1500 -- and I know you have some 1500 people

there -- identify our SCAM Document 1852, Selection, Care, and Maintenance for SCBAs as the tool that we use, as the document and standard that we used to basically regulate the maintenance, selection and care of our SCBA.

And in that standard it says, in 4.3.8, "The organization shall require that all members who use SCBAs are responsible for any part of the organization's respiratory protection program are informed and trained not to make any alterations or changes to any SCBA's original condition that causes the NIOSH certification of the respirator to lose its certification."

And so clearly, at least on that end, we had a conflict, it appeared to me, between OSHA and NIOSH between the fact that if we used our buddy-breathers, if we have them, we were in violation of 1852.

And I guess more importantly, we were holding up a standard that we were saying we need you to embrace and look at as a serious standard to govern how you use your SCBAs and we had such a conflict.

As a moral issue, I became concerned,

because if NIOSH was aware in their prohibition of circumstances or technological disadvantages that perhaps could end -- resulting with a firefighter's death, then certainly the prohibition was a serious issue, and we needed to uphold it.

But the fact that we were using buddy-breathers every day around the country, and it seemed like we were aware of that, NFPA-wise and NIOSH-wise, but we're living kind of in both of these worlds. And then on the flip side of it, when you heard that dull situation from around the department that said if we don't have these buddy-breather, we're going to kill firefighters every day, it really became a moral issue at that point in my mind.

I wanted to bring this forward. I brought it, as you said, to Les Boord who chaired the TCC. And I was trying at the time to inquire as to NIOSH's original prohibition; was it technological in nature or was it behavioral in nature? Because certainly if it was behavioral, I don't know that there's anything we can do technologically to effect the change. But if it was technological in nature, as you said, Jon,

we've had almost 30 years from that time and perhaps we were in a position to be able to make some technological changes that would have, I guess, addressed those issues that NIOSH had back in '84.

My understanding is that it was a technological issue. So at that point in time as Chair of the Respiratory Protection Committee in 1981, I formed a task group. And the initial task for that task group was to go back as a unit, work and come up with a recommendation to the full committee 1981, recommendation that we, as a committee, were going to pursue the advancement of buddy-breathing technologically and to work with NIOSH to figure out exactly how to do that. Or we were, as a committee, going to say we were not going to embrace buddy-breathing and that we felt that it was something we did not want to enter into.

Conclusion and the recommendation for that task group to the full committee was that they recommended that we pursue it as a technological issue and to review and open the door with NIOSH to review the original prohibitions and see if by chance

technological changes would now address those issues they had.

And so that's where we are right now. That's, I guess, maybe a somewhat long-winded brief explanation of the history as to where we're at and how we got there. And where we are today is exactly where we're at. You have opened it up for us to review this and you've brought it forward. And we get the opportunity for now the task group members to be able to share what they've compiled.

Are there any questions?

MR. SZALAJDA: There appear to be no questions right now, Dan. Thank you for that introduction.

MR. ROSSOS: You are welcome.

MR. SZALAJDA: And what I would like to do is introduce Clint Kaller, and he's going to initiate the working group's discussion of the subject.

MR. NEWCOMB: Jon -- Jon, can you hear me?

MR. SZALAJDA: Yes, sir.

MR. NEWCOMB: This is Bill Newcomb.

I would like to elaborate a little bit on

the background of this, since I was intimately involved in it at the time.

MR. SZALAJDA: Sure. Go ahead.

MR. NEWCOMB: In the 80s or in the late 70s, buddy-breathing was very acceptable in Europe, and there were a lot of units that had buddy-breathing connections on them. In the early 80s, about 1984 to be exact, I submitted a series of respirators SCBAs to NIOSH for approval that had the buddy-breathing connections on them.

Technologically, there was no problem with them. You could have two people breathing off these buddy-breathers, one with the self-contained and the other plugged into the buddy-breather connection, and they would both meet the breathing requirements. So it wasn't a technological thing. And it had been done in Europe, and OSHA allowed it.

The NIOSH prohibition was based on the fact that when two people get together and are plugged into the same unit, in a situation where there's a panic, they could very well go in opposite directions and end up pulling the facepiece off one person or things such

as that. And also the fact that now you don't have the air because you are splitted in two. And if you had a 30-minute unit to begin with and you had to use half of it, that doesn't give you a heck of a lot of air left.

So the prohibition was based on NIOSH's feeling that the use could endanger the users, not on a technological limit of the ability of a SCBA to supply air to two users at once.

The SCBA were approved with the buddy-breather attachment on them by NIOSH, but not for use for buddy-breathing. So the SCBA with the attachment was NIOSH approved, but it was not NIOSH approved for buddy-breathing. That was a prohibition that was put on the use of it, and it was put in the manufacturer's instructions. So, but it allowed the people that were looking at being compliant with OSHA, and having disallowed, to make a choice on their own as to whether or not they would allow it in use.

So I guess that I have a slightly different perspective on it and hopefully can spark some more interest in the discussion. Thank you.

MR. SZALAJDA: Thank you, Bill. I think that was very timely. And I think given Dan's introduction to the subject on the issue of behavioral or technological evolution, I think that's very pertinent. So thanks for the contribution.

Anything else from the LiveMeeting?

Okay. I think we will go ahead and let Clint Kaller begin the presentation.

MR. KALLER: Well, I hope after hearing both of those comments we're going to kind of show that technology may be able to take us past both of the things that were discussed here, even though -- it was Don, correct, the second gentleman?

MR. SZALAJDA: Bill.

MR. KALLER: -- Bill said that, you know, they felt that emotions in firefighters' ability to function together when the chips are down created a problem, for NIOSH to look at that. I think what you're going to see with what's offered today is technology will solve that because these things are not hooked to the facepiece anymore. So you're not going to be dislodging anything that's going to take

anybody into IDHL. So hopefully we'll solve, you know, the things that were talked about with both those comments.

Like Dan introduced, we are part of the task group with NFPA that was put together to address this issue. And I have worked on it for quite a while now. And we're going to go through -- you know, I'll go rather quickly through some of the things we talked about. But just like Dan talked about, the 1984 letter and the points he brought up -- and there have been significant changes in technology, which is what we looked at heavily when we said, hey, we think this can be readdressed. We think we have a case that NIOSH is going to look at this and say, okay, we can see that since 1984 things have changed enough that it's worth reopening and letting the public have a say in this and looking at the actual technology that's available.

In 1984 -- and like you said we do have some demos up here -- everything back then, more or less, was hooked to the facepiece with the sharing of the facepiece being one of them, which nobody here, I

think, is going to say sharing a facepiece and passing it back and forth and using a bypass valve is going to work with it during an IDLH.

There have even been some incidents that have not been that long ago where that was done by a fire department, and it did not work out and they ended up with fatalities. Because passing that facepiece back and forth, as was done years ago, is just -- it's not a good idea no matter how you look at it.

One manufacturer way back when did have a buddy-breathing pigtail that they used and plugged in that -- but it required, you know, the fact that IDHL could become involved and it's nothing close to the technology of today. And with the technologies out there today, there's really no risk of IDLH being involved when you're making this transition into buddy-breathing and the way the equipment is designed.

All these things that I didn't know I put in here --

Current technology today is pretty simple and basic across the board. I mean, they're not all

identical and I have some pictures for you. But generally speaking, there's a 36-inch hose coming off the intermediate pressure side of the regulator. So it's not like a UAC where it's on the high pressure end. It's on the intermediate pressure side, and it's hooked to a male and female, usually through a Y block type assembly. Those two things can be hooked together either male to female or female to male. It doesn't matter and that connects the two individuals together for buddy-breathing.

No hoses are connected to the facepiece. So even at 72 inches of distance if those people are tugging on each other or they're trying to crawl in a row or whatever, they can still do that and feel force on the thing. But it's not dislodging anything that's going to allow IDLH to get involved. Because it's all connected to the backpack. It's not connected to the facepiece to create the problem that was discussed earlier.

Here are some pictures of the different manufacturers, and I don't have all of them here -- I apologize -- but I pulled up some. And you can see

even though they're different, they're basically all the same. There's a Y block of some type. There's a male and female for each one and there's a protection cap for each one.

So these connections are not interchangeable among manufacturers, but obviously a department that is all in one SCBA, it does matter what connections you have; two firefighters there, they both have a male and female. As long as they can get one of those two together on either end, the system is hooked up.

And then 36 inches is a relative number. Some of them may not be 36. They might be 34. But also that's something that could be addressed in 1981, how long do we want that hose to be to allow freedom of movement with things to where we're not creating an issue between two people tugging on each other.

The difference between buddy-breathing a/k/a EBSS, Emergency Breathing Safety System, we kind of looked at that and thought buddy-breathing didn't tell the whole portion, plus we're a little leery of the fact that buddy-breathing kind of has a negative connotation to it because of the way it's been

addressed over the years; and it's in, it's out, we don't like it. There's all these problems so, you know, we're trying to learn to use another term here.

With EBSS, it's a connection that's sharing air at the intermediate pressure side. It is not a rapid transfill as with the UAC connection.

Once the connection with a UAC is made, there is rapid equalization between the two cylinders, whatever they have. One manufacturer offers a couple of locations that you can plug in. I want -- I'm not positive. I want to say they actually have an item you could get that you could actually pull a UAC female connection and hook into the male and transfer two people, even though they talked about it and said, yep, that's a no-no. The way it was written, it could be done.

But once it's done, you hook in. There's a transfill off of a RIT bag or something and the deed is done. There's no going back or changing it. There's no recouping that air back to the opposite direction. And the key thing here is it has to be coming in off of a RIT bag. It's not attached to the

BA. It's not already in the building. It's not one of the other fellow firefighters in there that could help the guy out. It's outside of the building. It's part of a RIC Team. It's a ways away.

On the other hand, an EBSS system you can plug the thing. You can breath on it. There is no equalization. One of the advantages -- and you got to remember we're talking about incidents that rarely happen are malfunctions of SCBAs that really rarely happen. But if the problem with the SCBA was at the first stage regulator, flow supply, or a leaking valve or something like that, a UAC becomes of no importance, because you're refilling an air cylinder that's going to blow the air right back out if it's a leak or doesn't allow it to get past the first stage regulator anyways. So you're giving a guy air he can't use.

On the other hand, EBSS is downstream of that. It's on the intermediate pressure side. So however insignificant it is or possible, it was a first stage regulator problem. EBSS works beyond that problem. It works on the far side of that system.

The other thing is, is with this system because there's no transfer of air, if the situation changes, you can release from that guy. You were not permanently hooked into him or you haven't given him something you can't take back, more or less. You're not giving him half of everything you own. You're working with him at the time. And if the situation changes, you can release from that guy if you have to. It's just an option.

I've listed some scenarios and like, you know, I hate to say it -- and it's a good thing for the firefighting end -- these situations don't come up too often fortunately.

One of them is, you know, if you're in a large warehouse and the guy simply exhausts air, gets off line, is lost in the thing, another guy can locate him. And if he's still ambulatory, plug in and walk him out, and that is the simplest of scenarios where the guy is still able to help himself once you help him with his air supply. And it's not going to get any easier than that probably.

A situation where a firefighter has become

entangled with something and now we can't get him out or he's been injured or whatever. The thing I like about this system is if his pals are there to help him, they can plug into him, assist him, and help with Mayday and get everything going. They can supply him air while they're waiting for RIC to get here. Otherwise, he's just there and he's got whatever he's got and it's good luck to him. You can supply him with air and calm him down and let RIC come in to do their job.

And I look at part of EBSS as I'm not taking anything away from the UAC fitting, but RIC is a ways out and this is there. Everybody in the building has the option of putting this into service if the situation warrants. It's already in there on everybody's SCBA.

Last time -- I list in here the travel time is extensive for tunnel fires and stuff like that. And this is something I don't think a lot of people have thought about.

If you're taken and you're going with four guys to a 7th floor and you're in smoky stairwell and

humpled up the floors, by the time you get to the 7th floor landing, you don't have a full cylinder. You'll be lucky if you have half.

Normally for us, or I think most departments, if you're doing that, when you're humping the stairs, you're taking spare cylinders with you. If you get up there by using this system, you can take and plug one guy into the other, turn his cylinder off, pull the cylinder out, put a brand new one in, plug him all back in, turn him on. And by rotating the use of EBSS, change everybody to a fresh cylinder with never being an IDLH.

They didn't have to take off their facepiece. They didn't have to give it the (demonstrating) swap quick. I'm holding my breath, none of that stuff. You plug in. The cylinder swap can be made, because you're above the first stage regulator. Everybody can get new cylinders that they brought with them. Now you're standing on that landing with a fresh cylinder and never been in an IDLH environment.

So it's an option that it gives you to

extend. And that's not just high rise. You could do it in tunnels or anyplace else where you think you're going to be extended, that it gives you a chance to swap and get more air in without having to go into IDLH.

Rapid intervention -- since I've kind of picked on them. This is a study that was done after Phoenix had a fatality. They ran multiple RIT drills. They used, I thought, realistic scenarios in a movie theatre in a country-western bar and a warehouse.

Their scenario was pretty much the same where they had two guys down, off the end of a hose line. In their whole report, they actually talk about that the guy was only 40 foot off the end of the hose line when they planted him to keep running the RIT drills. So they were consistently the same where you can follow the hose, but the guy is off the hose line and now you got to go find him.

It says here the university -- or Arizona State University did the statistical analysis in looking at the times. And I'm not going to read them all to you. But when you look at those numbers, RIT

is not rapid. Great mnemonic. I'm sure there's cases where people were substantially faster than this. But this is a pretty extensive training drill with, you know, 1,144 people involved over 200 drills. And this is the average times they came up with.

You know, we're talking about air cylinder life. If this guy goes into "I need help" mode and Maydays, he better have three-quarters of a cylinder to make 21 minutes waiting for RIC to get there, you know, or to get there and start helping him.

I just don't think that we have that much air left when things start going bad. And that's why I think a UAC is a valuable tool, because you plug into that guy and maintain his position and maintain some air for him while you're waiting for the people with the -- I won't say unlimited, but larger quantity of air and the tools to come in to help extricate the person. Because one of the things I didn't write down here is, you know, the two in/two out -- typically they said you're looking at 8 to 12 people to make a legitimate rescue. It takes a lot of folks to move somebody out of a building, because it's not always

ideal conditions.

So I see it as a valuable tool, not only just for the guy that, hey, you're lost; let me plug in and we can walk you out, but as a way to buy time. And if it's another crew that's found this guy, that crew may be able to rotate through their guys to where you're not just plugging one guy in and letting him bleed down. He's getting a little bit of air from that guy. You're swapping people. And out of a three-man engine, say, all three guys are giving him a little bit of air without endangering themselves, but allowing him to have the time for RIT to get there and help him out.

When we were looking at all this stuff and trying to gather up documentation to go to, you know, the task group, take it to this full committee and talk about it, there's limited, limited information you can glean from any place on the Internet about use of this.

People are reluctant to talk about it, even if they've used it successfully, because it's so-called, hey, you're not supposed to have this.

You're, you know, voiding your NIOSH and NFPA certification on your SCBA. So even if they've used it, it's not like it's going into a report that they're, you know, bragging about; hey, this worked out great. They don't want to talk about it.

We did go through a tremendous amount of NIOSH and NFPA fatality investigations. And like I said, you're trying to read between the lines on what was going on in some of those to try to compare it to this.

Not having, you know, been involved with a NIOSH investigation, I look at this and what I glean out of it -- and you may disagree -- is if there were fatalities happening out there where EBSS was being used and it contributed to two fatalities, I have a hard time believing NIOSH isn't seeing that somehow.

The department might try to hide it or not talk about it. But in the terms of the full investigation, that the investigators aren't going to have some inkling that these guys were connected together?

Don't know. I've never been involved in one

of the -- you know, but I have to believe they're looking at all angles of this. And somehow if that BA was, you know, listed there and they look at that EBSS that supposedly wasn't used and it's full of grime, even though it's back in the package, how are they not saying, uh, you know there's something up here?

Either way we could not find much, anyway, anyhow on any of these investigations we read through that we felt this was involved one way or another.

The task group survey did receive some positive comments on EBSS development, and we did talk to some people on the grounds of, hey, if you talk to us, you know, we're going to keep this in confidentiality.

And in trying to follow up there, I used the word "unwilling." That's maybe not the best word. But again, even though we're telling you we're not going to let this information out, people are very reluctant to talk to us and give us the full story of how their event went.

So when it came to gathering up information about this product and the fact that it's been used,

it was really hard to pull stuff out to bring to the committee and go, well, here's what we found. Because it's just not out there to look at documentation-wise.

With that, I'm going to introduce at this time, she's Deborah Crisher. They actually had an event within their city, and she's got a slide program that will kind of take you through that.

MS. CRISHER: All right. Thank you, Clint.

Thank you for allowing me to speak this afternoon. I'm happy to be here. I'm with the Virginia Beach Fire Department. We are a medium-sized department. And the event I'm going to share with you today is called the Allied Technology Fire, which was a very large warehouse fire, very unusual for us to fight that kind of fire.

Typically, we're a bedroom community. Typically we're, you know, maybe town homes and single-family homes is the type of fire we're used to fighting. However, on this day it was a little bit different, so we had an event.

We had a Mayday called. We actually had two called that day. But this one is about one specific

Mayday. And we had a positive outcome during that Mayday event for a firefighter in crisis. And Mr. Szalajda provided me a perfect segue into this PowerPoint presentation when he said this morning that it typically is tragedy that makes regulations and laws.

Well, we kind of had an anomaly to that fact, in that we prevented a tragedy with equipment that is not currently regulated. So a very interesting set of circumstances there.

Okay. "Mayday! Mayday! Mayday!" are perhaps the three scariest words any firefighter can hear on a fire ground. Whether you're the Incident Commander or whether you're the rookie firefighter, you know that there is someone in dire need right now, someone who immediately needs help and assistance, someone who could be dying within seconds, within minutes. We don't want to hear those words. Nobody wants to hear those words, and it kind of brings ice to our veins when we do hear them.

Well, we heard it that day at the Allied Technology fire. It happened on March 10th in 2008.

It was a beautiful spring day. Trees were blooming, everything -- the weather was about 60 degrees.

(Pause.)

MS. CRISHER: Okay. Thank you. I'm technology disadvantaged here.

All right. On March 10, 2008, 11:31 a.m., we had a fire. It originally came in as pallets on fire and then -- it was called in by an alarm company. And we get typical alarm, sends one engine. Because it was just called in by an alarm company. But en route, they said that somebody called and said they had pallets on fire in the warehouse. So the first engine then went ahead and called the full structure, and the units started responding that way. Ultimately, this was upgraded to three alarms, 46 fire apparatus were included and 116 personnel. It went in well into the evening.

Allied Technology is a commercial structure of approximately 139,000 square feet. It's a corrugated aluminum structure on a concrete slab. Just to give you an idea of what it looks like, where it says "Allied Technology Warehouse," we're looking

at almost 43,000 square feet of warehouse alone.

In the front of that building were some offices. It was a little bit of warehouse storage space behind them, and Bill's Flea Market was connected to it. The Bingo and the Fabrics really weren't involved, as they had a little bit of distance between them.

But just to give you an idea of how big it actually was, there's an aerial view of the building itself. And an even better idea, you can see the engine there right in front of it, how small it is, and the whole warehouse part of that. That's how much area that our firefighters were dealing with that day.

And the smoke conditions that they were dealing with as well -- and that's where it comes into play a lot. A lot of times when people think about firefighting and whatnot, they see the Hollywood version of firefighting, when it's like everything is all lit up. There's bright orange glow and they just go in and put out the fire. There's no smoke or anything, when generally that's not the case.

Generally, it looks like this. You cannot

see your hand in front of your face. If you have a flashlight, it's typically reflected right back onto you. So they're going in there virtually blind. And I was hoping the pictures of these smoke conditions would give you an idea of what our firefighters were dealing with inside.

Not only do we have heavy smoke issues, we had access issues. The whole warehouse was completely filled with rack shelving almost to the ceiling. All the shelves were full. In addition to that, the people who were there had some excess materials that they stored along the aisle ways.

So now picture this. You're in that completely blind environment, trying to locate a fire and you're trying to work around all of this equipment and everything. So that gives you an idea of what they were dealing with.

Now, the actual Mayday itself. Picture yourself going into this warehouse trying to locate the fire, and this is what you see, carrying a hose behind you or whatever.

The crew that ended up calling the Mayday

was a three-person crew on Engine 32. Engine 16's crew had already been inside. The air supply was deleted, so they were coming out for a bottle change. Engine 32's crew was sent inside to relieve them. There was a hose line already extended into the building and the smoke was very dense. Approximately one hour -- one hour into the incident at 12:25 a Mayday was called.

Let's see if this is going to work this way, and it will not. Okay.

Now, let me give you a little bit, because this is kind of hard to hear. What you will hear, the first words you will hear is the IC giving direction. And then you'll hear a strange noise. That strange noise is the firefighter who's in trouble trying to call a Mayday. Then you hear silence. And I can see this IC listening to that sound is going, what did I hear? What was that? Because it gets very, very quiet. And then a division chief kind of comes in. He didn't even hear that noise, and he says something, a little bit more time elapses. Then you hear an actual Mayday called. And then I'll explain more

about it after you listen to it. It is kind of hard to hear.

(Whereupon, an audio tape was played.)

MS. CRISHER: Imagine what your heart's feeling at this moment.

Okay. I'm trying to minimize it. Just minimize it?

MR. PERROTTE: Yes. Minimize it, then click on the line.

Ms. CRISHER: Right here?

MR. PERROTTE: And then the bottom where you can type on it. You got it. Just click on that.

MS. CRISHER: I apologize. I'm sorry.

All right. Pretty chilling stuff there, I think. If you were actually on that ground, you were actually that IC and you had absolutely no idea what was going on inside; what's wrong with these? How many are involved? I can just imagine my blood would turn to ice. It's very, very scary to think you my lose one of your own, and I'm sure that's what was going through his mind at the time.

So what really happened?

Engine 32 crew followed a pre-existing line into the warehouse. The captain left his crew and was evidently gone for a period of time. After he had left his crew, he became disoriented. He couldn't find his way back to his crew. He noticed he was getting very low on air. There's conflicting reports about what happened at this time, where he was and what he was doing and where he was going. But he eventually found an Interior BC. He advised, I am low on air. The Interior BC instructed him, get your crew and get out of the warehouse.

He went back to look for his crew. He could not find his crew. Again, remember the smoke very, very dense in the air. He couldn't find them. But they kind of had their eyes and ears on him the whole time. He did not realize that one of his crew was right behind him, just several feet and the other was just to his left, just several feet.

At this point, his low air alarm starts sounding. They witness his disorientation. Firefighter 2 followed him. They knew his air was getting low, wondering why he was going deeper into

the structure. So the firefighter number 2 followed him deeper into the structure. Again, the low air alarm sounded. When the low air alarm finally went off, the captain attempted to call the Mayday. That's what you heard in the very beginning of that tape was him attempting to call a Mayday.

They witness him stumbling back and forth between the pallets. Firefighters 1 and 2 grabbed the captain, those were their words, and they -- firefighter 2 then successfully called the Mayday. That's the one you heard. As the Mayday was being called, the captain's air supply completely ran out.

Now, again if any of you have ever experienced -- this is an awful feeling. We ineloquently call it "sucking mask," because that's exactly what you do. The mask sucks tight against your face. There is nothing for you to breathe. And if you're not familiar with it, just picture putting a plastic bag over your face and trying to take a breath. There is nothing there.

So he did the only option that he had at that moment, he thought. He broke his seal to his

mask. So what happens when he breaks the seal to his mask, he's breathing the IDLH atmosphere now, with all of it associated risks, hazards, and everything else.

Luckily, his two partners are right there with him. Firefighter 1 attached his buddy-breathing system. And the Interior Crew met up with the Interior BC which then lead that crew out of the building.

Both firefighters 1 and 2 agreed the training they received on "Mayday and the Firefighter Down" and "Buddy-Breathing" positively effected the outcome of this situation.

We have had -- I'm going to estimate about 1997 is about when we got the buddy-breathing connections. And we have trained on them. They trained on them frequently so -- and we also do, which he spoke of, the Phoenix drills, okay. We do the Mayday; Firefighter Down drills as well. So these guys are familiar with what to do. They didn't panic. They just did what they had been trained to do. He got air.

Now, please keep in mind that we had a RIT

team right outside and we did have the RIC connection as well. But he was out of air at that moment. He's breaking his seal, breathing the smoke at the same time the other firefighter is hooking into his buddy-breathing system.

So we had a very good outcome with this. All the firefighters were released. There was not injuries. And it caused a lot of retrospection when they went back to the station; what if. What would have happened if they hadn't seen him? What would have happened it they hadn't been able to attach their air to him? You know, a lot of what ifs.

So I wanted to share. That was a positive outcome to some piece of equipment that does have some negative connotations. We were very, very lucky that day. We do not take it for granted that we were very, very lucky.

And does anybody have any questions on -- that I can help with or answer?

All right. Thank you very much.

AUDIENCE VOICE: Was that tape realtime?

MS. CRISHER: Yes, it was.

AUDIENCE VOICE: It was compressed. It was absolutely compressed when the first Mayday began. There were gaps in times in there.

MS. CRISHER: Right. There was just dead air.

AUDIENCE VOICE: Right. But that was compressed on the tape.

MS. CRISHER: Okay.

AUDIENCE VOICE: That was about a three-minute period --

MS. CRISHER: Right.

AUDIENCE VOICE: -- much less.

MS. CRISHER: Oh, yeah. Well, to me, it seemed like three minutes still. Yeah. It was. It was about a three-minute period. Exactly right, yes.

AUDIENCE VOICE: For that Mayday, there was no missing -- I think the other crew took three minutes to find him.

MS. CRISHER: His crew was right there with him when they hooked into the buddy-breathing, and then they started escorting him back out. In the meantime, there was another engine crew inside of

there, getting ready to come back in. They were not that deep in the warehouse. But again, the conditions and the visibility was so bad that they weren't exactly sure where they were. Well, they had another crew coming in. The Interior Battalion Chief was toward the exit as well. He heard the Mayday. He knew the about location of where that other crew was. So between the group of them, they were able to escort them out.

Anything else?

Thank you very much for your time.

I attempted to put that back in and --

MR. KALLER: Well, thank you.

So in attempt as the task group was putting stuff together, we came up with a questionnaire about EBSS and put it out. Because like I said, gathering information on this thing was tough.

So fortunately our task group was pretty astute onto this and Division Chief William Flint from D.C. Fire and EMS put together this thing, got it out over the Internet, got it to a group of people to ask. So I'm going to let him walk through what we found out

from our survey, so-to-speak.

MR. FLINT: Good afternoon. I'm William Flint. I'm Chief of Safety for D.C. Fire and EMS. I'm involved in a Respiratory Protection Program and actually on the 1981 Committee as well.

As we got the task last spring with addressing EBSS, we looked around the room -- and I see many of the same faces from the committee here -- and we asked how many times has EBSS been used. And we came up with one time, and that was Virginia Beach. We asked, how many people have tried to use it and have not done it successfully, and we didn't have an answer for that. And then we asked, of all the SCBA that's being purchased now, who's buying it and how many units are being purchased and what percentage of departments in the United States use EBSS? So we came up with an answer to that, and we'll discuss that.

Came up with the number of goals within the task group and came up with just blank answers. We didn't have a real idea. The manufacturers came up with a round number. They said about 60 percent of the SCBA that they shipped over the last couple of

years had been shipped with EBSS, of one form or another, and not the RIC UAC, but a separate EBSS system.

So now we wanted to see how does this address or how does this work out with the American fire service. Is it only large departments? Is it only small departments? Volunteer? Career?

Are people getting training on this, or is it just a piece of equipment that shipped that people have to figure out on their own? And do individual departments develop the SOGs to use it properly? And then whether or not we had anymore reports of successful or unsuccessful use of EBSS.

So rather than call everybody that I know in the fire service -- all two dozen -- we came up with an instrument and tried to push this out to a larger sample of fire departments in the United States.

Multiple choice, make it quick and simple. Give people the opportunity to give us information, and actually the most interesting part.

And then because of the politics of all this, we had offered an anonymity, so that we weren't

going to hold anybody -- we weren't going to publish their e-mails and their names and addresses for everyone to see.

So we went live in April. Went to a number of different instruments. There's an e-mail message board called "The Secret List," where three or four times a day, sometimes I'll get a message about a line-of-duty death or a severe injury to a firefighter in the country. We went to the International Association of Fire Chiefs and to their Safety and Health Section, and they put out a series of e-mails requesting input. And then I'm also a member of the Fire Department Safety Officers Association with about 10,000 members.

So Secret List -- About a hundred thousand e-mails. IFC was around 15,000 e-mails to individuals in the fire service and then FDSOA was about 10,000. Many of these same folks overlap. But we're about a hundred thousand people that we asked to participate. Of that, almost 2,000 responses. And those were all cataloged. And of those, over 600 folks took time out of their day to give us a comment about EBSS and what

they felt about the process.

So let's start. I'm not a scientist. I'm not a statistician. I'm a firefighter. So when we go out and we ask people to respond voluntarily, I'm told this is a convenient sample. So we're not going to make any broader allegations about the National Fire Service or the fire service in the world. But we're saying that of the people that responded, these are folks that wrote back, and this is what their comments were back.

We had problems with terminology. We got this from the comments that sometimes people were a bit confused between the difference between EBSS and RIC UAC connection. And then, of course, whether it was a regional difference in terminology or an equipment difference in terminology, people use proprietary terms that we had a hard time understanding so --

The other part was the reluctance to follow up. I reached out to about 40 of the people who had written back to us with stories and asked them to either elaborate, and many of the folks actually asked

their bosses if they could call back. And they were told that they shouldn't, because of some perceived liability. So we respected their anonymity here. We have a couple of comments that we've left in the survey. But we're absolutely not going to be releasing e-mails and things like this.

So how does this all work out?

Forty-two percent career. Twenty-nine percent volunteer. Twenty-eight percent combination. That's a pretty good mix of the American fire service.

They ran the gambit of individual responsibility areas within the department. Quite a few firefighters, quite a few line officers, not as many SCBA program managers as I would have thought. But pretty much every job description within the department.

So of the people that wrote back, 2000 people, how many of you use EBSS? And actually 80 percent said they did, about 15 percent said they didn't, and about 5 percent said they weren't really sure. So that puts a little bit of an error in the mix.

The size of the department -- And this is representative of the United States Fire Services as well. You see that while we do have a big spike in the departments over 1,000 -- remember, they've got a lot more people in those departments to write in. We did have a number of people -- duplicates from one department who would write in.

And then the training in the SOGs -- It's interesting that many people had had training on it. But it wasn't consistent training and it wasn't a hundred percent. If we'd asked the same question, how many have received training on how to use, you know, the pump on your fire engine, it would have been a hundred percent. And these are all focused things that they're using every day. This is more of an emergency interpreting, you know, the responses here that this is more of an emergency piece of equipment. But they're not using formal training. They're not actually going through and performing formal training and developing SOGs for this. This is more of an ease of use or a confidence of use. Most said that they would be comfortable using the EBS system.

And then, of course, one of those wonderful questions, do you feel that it's important? So I think that was pretty close to 90 percent, and that was consistent from the first week to the last week, that 90 percent of this convenient sample, this convenient survey were people writing back, we're all motivated to say that yes, we felt that is an important part of the breathing apparatus.

So comments -- 244 generally positive. Eighty-one generally negative. And then quite a few suggestions. The positive comments were we feel that it should be a part of the specified piece of the breathing apparatus, that it shouldn't be an option. It should have any -- you shouldn't be able to buy an NFPA certified SCBA without having EBSS on it. And then about half, 44 percent, said that it should be an option.

Other comments in here -- Some that wrote in said that they would much prefer to use the low pressure air, rather than the high pressure air off the RIC UAC.

So now the negative comments -- People feel

as though the SCBA is complicated enough; why add on another layer of complication? You know, funding is always an issue.

Some people haven't really addressed the need for it. They say that we have other ways of getting around this system. Some people called out NIOSH and said, well, we would buy it, but NIOSH says that we can't.

And obviously, you know, it sort of runs up and down.

And now the suggestions -- Within the committee, we had discussed why we would be going forward with the specification. So when we go to the general public, or the fire service in general, we ask them what comments do you have about EBSS. It was interesting that many of the comments that we had within the committee came back up in the comments.

Universal fittings was the first and most common suggestion of all the folks out there.

My department, well, we all use one particular brand of breathing apparatus. In fact, the region, the National Capital Region, uses common

equipment so that we're interoperable in larger events. This is a lesson hard learned after the Pentagon and 9/11. So interoperability is not much of an issue for us, because of the nine or ten counties or the nine or ten jurisdictions within National Capital Region, everyone is interoperable between fire departments, between agencies. But many other places, one town has one manufacturer. The other town next door has another one. And now if there was a situation with a Mayday or a firefighter low on air, they each may have an EBSS system, but they would be interoperable and one firefighter wouldn't be able to support the firefighter from the neighboring jurisdiction.

Need of training -- You know, this is another thing that we -- of many of the comments came back and said if NIOSH would approve this, then we would feel more comfortable about going out and providing the training to our personnel and actually talking about this. But we're supplying the equipment, but we're not really discussing it because we're concerned about the legal ramifications.

So then more technology issues here -- many comments about gloved hands. And these are all things that can be addressed within the NFPA committee because these are all performance requirements which can be spec'd in or requirements put in to make sure this equipment is more useful.

Now, here again, once we're getting down into the one or two comments out of the 600 that were submitted, it's interesting to see that some of these comments keep on running in. Even though the survey was about EBSS, we still had issues here about cylinder size and limiting the hood.

So we asked a question: Do you know of anyone who's ever used EBSS? So 33 folks turned responses back in saying that they had. Of those, most of them were the connect and exit.

Clint had talked about having someone at low on air. If I'm low on air, but you got three-quarters in your cylinder and all we have to do is hook up and exit, well, that's a positive outcome.

This is what happened in Virginia Beach. Did I need to use half of my air cylinder to support

that person, absolutely not. It was just exiting the IDLH, making sure that nobody took a breath of smoke and would get out the door.

Connect and protect in place -- We had two instances where firefighters were trapped, well either entangled or trapped by falling debris. And that person was maintained, sheltered in place. EBSS was used to maintain the air supply until the arrival of the RIT team -- and for those of you non-fire service, that's the Rapid Intervention Team, which is more of a common policy in the country these days, where for every building fire, we'll put a dedicated team outside of the hazard zone, that if a firefighter were to become lost or trapped, that those folks can engage and then get that firefighter out.

But connect and protect in place -- and then two of the instances were negative outcomes where a firefighter was low on air and tried to hook up to another one. And in one case, there was an equipment failure. And the other one, they went to hook up with somebody else, he had the EBSS connections on his breathing apparatus, but the other one didn't. So we

just categorized that as a failure, because while half the equipment was there, there wasn't a compatible system to make a full connection.

I think I've explained all of those. So here are some anecdotal responses. These are some of the things that folks wrote in.

Firefighter out of air in the basement, deployed the system and got out. Positive outcome. What we were looking for. Not one had to take a breath of smoke.

And then, obviously, probably never even hit the papers or wasn't even written up. This is an anecdotal response that if we hadn't asked the question of the people that had it written in, we wouldn't have any idea that this ever happened.

Same thing there. A connect and exit. In this case, they actually called a Mayday. Firefighter was out of air. The Rapid Intervention Team went in, located the firefighter, was able to connect and exit.

Well, in my agency the Rapid Intervention Teams carry a RIT pack, which is a separate air supply cylinder. It's got a number of different connections

for supporting a down firefighter. But in this case, the team was just able to use EBSS and walk the firefighter out of the smoke.

And once again, another connect and exit. In all of these cases, you know, this is essentially what the person put into the field on the survey.

So protect in place -- I'd ask what a bonus room was. It's, I guess, over the garage where there's an extra room where it's built out so you have extra living place. They don't call them that in the Mid Atlantic area. But a bonus room collapsed. The person was trapped. He and his partner called a Mayday. They were able to connect and maintain air supply as the extrication took place.

And then the same thing. They are trapped and lead to collapse in a garage, EBSS.

Part of the nature of the survey, we couldn't tell if this was one incident or two. But I'm reporting it just because it's a possibility of a trapped firefighter who is a good candidate for that RIT Team to come in. But if all you need to do is maintain him for a minute or two, where you get him

out, disconnect him, cut the wires, or whatever the entanglement is, that you've then received a positive outcome.

Once again, the reflex time from calling a Mayday to engaging the Rapid Intervention Team, if it's even on the scene, can be two or three minutes. Sometimes if you've got a failure of your other systems, that two or three minutes of breathing smoke can actually lead to the death of the serious injury of a firefighter.

Every department has different policies and different procedures in place for the establishment of a RIT Team. In my department, it's the fifth due engine. But before the arrival of that fifth due engine, with the ability to use EBSS, then essentially we've got five or six other possibilities of supporting that firefighter with breathing air until the arrival of the RIT engine or putting another company in to support them.

So, here again, protect and place -- Down firefighter, supported using RIC UAC or actually -- my mistake. But this was RIC UAC and then packaged and

taken out. So that's the final slide that I have.

The issue with the survey was that up until we started asking questions, as I say we had one response nationally of -- or one known incident where EBSS had been used successfully or not. So added a little bit more to the discussion, we tried to pull in some more information.

What was most interesting to see was that there is no such thing as a monolithic National, United States, North American Fire Service, that there are regional peculiarities, that there are regional attitudes towards the use of breathing support. But by the generally positive comments, I think that it opens up the discussion and I think that we would like to continue this, looking toward bringing this in as an approved piece of equipment and also an approved procedure. Clint.

MR. KALLER: Back to the original one. Back to 5A.

So of the manufacturers that are out there, we surveyed, you know, all the ones from the personnel that sit on 1981. And the percentage that came back,

we kind of alluded to. But it was anywhere from 50 to 80 percent of the units they sell into the field that come with an EBSS device.

Covered some of the stuff in the survey comments. 87 percent of responses indicated they feel EBSS is an important issue here for us.

Like you said, our survey isn't scientific evidence. But the people in the field are telling you, you know, what they're looking at and how they feel about it. And it was 50/50, I may not be sold myself. But 87 percent is a pretty substantial number where guys feel like they have some faith in this thing, and it's an important thing for firefighters to have.

Eighty-one percent of them said they specified in their -- you know, next to SCBA in a purchase. It was up to them, this would be part of their specification.

Something to keep in mind here that from an NFPA standpoint because we have, you know, worked on the language. It will go in 81 on the pretense that we want to be ahead of the curb, that if this becomes

possible, we don't want to be writing after the fact or not be prepared to move forward with this.

We're not saying this is a mandatory item. This is still in the options section of 1981. So for the people that, you know, are out there that feel like, hey, we want no part of this, we're not going to make you have a part of it.

It's a device that we feel has value. And if your department feels like, hey, we can support this device and train with this device to make it worthwhile and safe, it's there for you to use. It's not something we're trying to force you into or increase your cost with.

The other thing is, is although you could say this device to some extent has been an unregulated and undocumented component, obviously firefighters are purchasing it, departments are purchasing it, and they're using it. I'd have to believe that if it becomes an approved device, in which case other NFPA committees will be involved with writing things about this, that the safety factor of this thing is only going to get better.

When departments have no qualms about writing standard operating procedures for an approved device versus they're not typing something into their books for an unapproved device, I have to believe it's only going to get better for the end users, as far as his end safety and the amount of drilling that's actually going to go on.

And then lastly on this, I don't look at this as something we're using likely. This is a last ditch option. You should have performed your Mayday. That department hopefully has a well working air management system to keep you out of these situations.

This is really all else has failed. You've had an SCBA failure of some kind or you got off your line and you were unable to help yourself, and now there's somebody else hopefully that can help you. It's certainly not I want to stay in the fire longer because I think it's fun. You're just stressing out all your ensemble and what that will survive through. What it is, is all things have gone wrong and now you're not able to help yourself, and this is a device that can come in. And if you're able to help

yourself, this is not, you know, something that we expect to be put into service, you know, all the time.

We kind of already talked about, you know, the things Cal/OSHA says and OSHA says. And if you go through and looked at it -- and Chris and I looked at these things on line -- pretty much if you go to any state, they all pretty much say the same thing.

Washington has it different. In their thing they talk about it.

And I even brought up to the point that in the Scuba Diving industry, this is a mandatory device to have that second regulator on there. And they're going to share their air at whatever depth they're at, if they have a system failure.

If I have a choice between breathing IDLH and salt water, that's not really much of an option. But somehow however distantly related you want to make it, it's a standard mandatory device for them.

And I'm not using OSHA to point fingers at NIOSH. I don't want to, you know, say that there's an argument between them. I really only emphasize them to say that other people looked at it and see value in

it. And I think the 1984 letter is -- has been information off of what was happening in 1984. And we're in a different era with technology and the amount of training and things we do in the fire service that I think it merits, you know, some real serious consideration that this is a device that can be used successfully to help firefighters.

Obviously, most of this stuff has been in 1981 and talked about. And like I said, we've prepared documentation within the task group that if this thing flies, we're ready to rock with it, more or less. And we did have a lot help within the group to do that.

I've had people ask me over and over again about 1500 and 1404. And no, I cannot speak for them. But what I have been told by people on those committees is, hey, we understand what 1981 is up to. We understand what you're talking about. And, you know, we're not slamming the door in your face. We're ready to discuss it.

But like 1404, they can't discuss it unless we make it happen. They're writing the training for

it. Well, they can't write training for something that doesn't exist right now, technically speaking. So some of those things are held up by where we go with 1981. But we have had discussion with them. There have been people that have talked to all the committees about what's going on with 1981 and where we intend to go with this.

And that was it for what I had presentation-wise.

Okay. So at twenty after three, we'll come back for questions. We'll be available up here. We have some new, some old SCBAs. So if you want to kind of look at the way things used to be done in 1984 and what was available to you versus what's available by a few manufacturers now, and you have questions about how that's going to work, we'll be happy to talk you through those.

(A short break was taken.)

MR. SZALAJDA: Again, one thing we did hear from the social media world was that if you are making a comment to try to get close to the microphone in the center. They did have some difficulty hearing the

questions, or at least the comments, that came from the microphone in the middle of the room. So if you are going to make a comment, if you can, you know, make sure you're close enough to the microphone to be heard.

Also the Docket is 147. And I think what's critical here is the timing of the closing of the docket. It closes on January 30th, and that coincides with the next NFPA 1981 meeting. So with regard to comments that are provided, time -- well, there is some time. Time is of the essence at least with regard to providing us feedback.

And these are the -- there are two slides which have topics where I'll be soliciting input from our panel. And to some extent, we've heard some discussion, you know, with regard to the feedback that we had from the LiveMeeting topics or presentations that were made, as well as the presentations that were provided. And I think at least I wanted to initially -- let's start with the panel or viewpoints and experience on the current policy, whether there's any opportunities or you wanted to expand on anything

that you may have presented earlier or if there was additional information that you would like to be considered. And then we'll follow the same format that we did this morning. We'll go to the audience here in Pittsburgh and then go to the media.

Chris, can I start with you?

MR. ANAYA: You know, I didn't do this before. I want to do it now. I thought about it the minute this thing started with the first meeting.

And I want to thank NIOSH for this opportunity. And this is an important first step, I think. And I'm really grateful that you guys are having this discussion, because this is important, I think, for everybody and not just for buddy-breathers, but the other subjects as well. I just want to thank you and everybody else participating, including my friends in California that's on the phone right now. But I appreciate it.

I'd like to just comment on some issues that have come up regarding the statutes that were read. And they apply -- federal statutes apply to fire brigades, which often -- private fire departments, for

instance, Texaco, Chevron. They have fire brigades. They're not public firefighters. They're not municipal firefighters. And in California, we're unique and there may be other states as well. But since I'm from California, I can only speak on our statutes there.

After -- federal OSHA came out 1970. California lawmakers got together and developed their own state plan, oSHA. They had their own version of OSHA back many decades. But when federal OSHA came out in 1970, they went ahead and promulgated their own Cal/OSHA in October of 1973.

And when they did that, they went ahead and didn't narrowly interpret the statutes, the federal statutes to mean only fire brigades, that buddy-breathing could only be used for fire brigades only and not in municipal firefighters. They went ahead and placed that into the statutes, so that all firefighters, regardless if you're a fire brigade, volunteer firefighter, or professional firefighter at a municipal fire department, we're allowed to use buddy-breather. And that was more than 35 years ago.

And we have been using them ever since.

And to the best of my knowledge -- and Cal/OSHA is participating remotely right now, perhaps they can expand on this. But to the best of my knowledge, from information from staff at Cal/OSHA, they're not aware of any fatalities that are a result of somebody in buddy-breathers in the last three or five years.

And I want to emphasize, there's a lot of firefighters in California. I don't know the exact number. I can't get the number, to be honest with you. But I believe it's well of 40,000 firefighters. And I have to emphasize that that's just an estimate I have. It's just a guess on my part based on trying to get the different organizations to tell me, you know, how many volunteer fire departments are there, how many professional fire organizations, how many fire brigades, and there's all these different categories. And it's just really tough to get a handle on how many firefighters there really are that the statutes impact.

So I just want to make that clear, because

one of the records I read in NIOSH's documents to the New York Department of Labor when they asked about buddy-breathers back in '85, the response was, "Well, this only applies to fire brigades." In other words, you're not a fire brigade, you're municipal fire department, so this doesn't apply. Well, in our case it does apply. So that should not be used. Not to mention, we do have an obligation to the fire brigades that are out there that do use the stuff, that federal OSHA does permit it.

I do know as a reference, it may help people to understand if -- I'm sorry if I'm boring you, because I really don't know how much knowledge everybody has. But federal OSHA originally was drafted and promulgated in 1970 for the private industry, not the public sector.

And for that reason, that's my guess why fire brigades was listed and narrowly applied only to that group and no other group. But since then, many state plans have developed -- have adopted federal OSHA regulation to apply to their state plans, and we took that's public employees also. In some cases they

didn't change the language like California did, in terms of applying to all firefighters. So that was important for me to say.

And the other thing is we've been using these buddy-breathers without NIOSH approval. And that's what the statute says, we're allowed to use buddy-breathers, even though they're not NIOSH certified, as long as -- and this is the catch. It's kind of a catch-22. We're allowed to use it as long as it does not cause damage to the apparatus, restrict a flow to the apparatus, or obstruct any kind of normal operation of the apparatus.

Well, heck if this isn't tested by a third party, such as NIOSH, who is the third party that's supposed to be testing and certifying this stuff, how do we know that we're not violating the law or putting our guys at risk?

What we're assuming is it's going to be fine based on the manufacturers, and I do trust the manufacturers. But that's why we have NIOSH. It's a third-party agency that's there to test and certify the stuff to make sure that, in this case, the proper

air flow is going to be able to support two people, to make sure that they're not going to freeze up -- if there's so much air, you're not going to freeze up your regulator. There's a whole list of things that come to mind, that the umbilical cords are long enough, let's say.

So it's real important that NIOSH's takes a step, takes a look at this and start certifying the stuff so that we can at least be a little more reassured that this stuff is going to function as promised by the manufacturers.

A number of things have happened as -- and I don't want to be redundant or repeat something that was said earlier by the panel. But a lot of things have changed since the 80s or the 70s. And we have redundancy systems greater than we ever had before to warn us that we may be getting low. A heads-up display, that's right in your face. You know exactly what your air level is. You're constantly being reminded. We didn't have that years ago. We have two in/two out. We also have -- in California, we call it "RIC." I guess the East Coast, they call it "RIT" --

"Intervention Crew/Intervention Team," whatever. You have a team ready to come in in addition to the two in/two out, in case there's a Mayday.

How do you do Maydays?

Well, now where I'm from, everybody is assigned a portable radio. And so we didn't have that years ago. One guy was assigned to a radio and you were separated from that group, they had no idea where you were. Now, everybody has a radio. We're all on the same page. We have much better training than we've ever had in the past.

It's constantly drilled in our head and -- in fact, I think anybody up here can probably verify how much training we have to go through, more than I ever recall in my career. But it helps. It certainly helps and it makes you more prepared. Should you ever have a problem or somebody else have a problem, you're able to react and remain calm and do what you need to do to get out safely.

And I think that's about it. That's all I have to say. You shouldn't have asked me because I get long-winded, as you could tell.

MR. SZALAJDA: That's all right, Chris. Thank you.

Anything else from the panel on the first subject?

MR. KALLER: A couple of things I wanted to add to you that people had questions about at the break, about the use of a system like this. And some of the things that had been discussed within 1981.

One of the things that was brought up is the air cylinder size. And it's certainly been a discussion amongst the task group and the committee itself that with a system like this you may be required to purchase this only with an 1800 liter cylinder or bigger, so that you have more air to work off of, and the guy that's trying to do the rescuing isn't starting out with a 1200 liter cylinder that's already be used to some extent. So this kind of language has already been discussed in there and put on the table and, you know, looking at flows and people's intake and stuff like that.

The other thing was one of the tests that we came up with, and NIOSH was a huge help to us on this,

when we're looking at these things, and I'll be the first person to say even though this product has been out there, I think the manufacturers prior to this have done an outstanding job.

Nobody has built something that's out there that really isn't working, even though we're going to call it unregulated. Everybody that's building this stuff realizes this has got to be a high flow device and have done a very honest job of making it work in a condition we're not supposed to be using it in. They've all done a fair and admirable job to the benefit of all their own, you know, companies to protect firefighters, which is their goal.

But we have looked at that. And one of the tests that NIOSH assisted us in looking at saying, hey, this will be the toughest thing you could do is take two BAs, cold soak them, you know, hook them together on a machine, one with an almost empty cylinder, one with full -- I'm really making it simple terms here -- hooking them to two machines that are breathing 103 liters per minute each at the same cycle and breathing those things down to empty. And you

know, I'm not the scientist type. But that is a far tougher environment for an SCBA to live through than if we have in a heated chamber.

So NIOSH did have a piece of this when we discussed this in the committee and gave input as to the manufacturers; hey, we're looking for this thing to work with two people breathing heavily at the exact same time for an extended period of time in a freezing environment. If anything was ever going to go wrong, that's when it would do it.

So those are the kind of things that NIOSH was looking at that gave us advice as to what we would consider putting in the 1981 for it to pass, you know, at our level to try to find the most extreme condition it has to operate in and make it through.

MS. CRISHER: I just would like to add one other thing, and it kind of reiterates what they're talking about.

Based on the surveys that came back, it's obvious -- not obvious, it's evident that perhaps about 70 percent of all fire departments out there have these tools. And it's scary to me -- I was the

Health and Safety Officer during this investigation, and it's scary to me that there's no training requirements on it, no testing requirements on it, nothing to make people learn how to use them, to use them safely and effectively. They just give it to them and told them to use them. So that's why I would love to see a change made so that people have to train on them. People have to test on them, just as all the rest of our equipment is done.

MR. SZALAJDA: All right. Thank you.

Are there any comments from the floor on the viewpoints and experience on the current policy?

MR. DUFFY: Okay. You know, there's never a microphone I don't like so -- Duffy with the Firefighters Union. I just got a couple of things to say.

Most importantly, earlier on today there was a slide up there that said that the IFF and a couple of other organizations was opposed to buddy-breathing. That's about two decades old. And we're in no opposition to the buddy-breathing issue. I think the clearest issue that we have to get them to explain

that, and the simplest way of explaining it, that if your partner ran out of air, what would you give your partner? And the answer is half your air, then I think that's the answer to what buddy-breathing really is out there.

The issue when you talk about Mayday, though, was a real serious issue. And the lack of training -- and I agree with you, by the way, amen on the breathing apparatus issue.

You know, we live in a country where I can't go out and get my scuba cylinder filled anywhere unless I can show my certification. They will not fill your cylinder.

You can wear a breathing apparatus all day. You can go get the box, open it up and wear it, and have zero training. And you know what, believe it or not, there's very limited training in many fire departments across this country, and anything that enhances that would be a big benefit.

And I want to just give you some -- as an example of what was talked about on this Mayday, how serious this is. About -- and you may know the

answer.

About four years ago, there was a study done in Savannah. They called it "Project Impact" and they published it regarding Maydays.

What they did is they took 160 of their firefighters -- and these are career firefighters -- and they brought them into training one day. One didn't talk to the other. In fact, they signed some confidentiality agreement. And they were put in a scenario where they're in a cold, smoked shopping center, with zero visibility. The same fire that happened down at the beach. And then they evaluated what they would do. They said you're in trouble. You're separated now from your crew. You're disoriented. Get out of this room.

And I'll give you the numbers because they're pretty -- they're sad. Fifty-two percent attempted to use their radio. Again, they all had radios. They had full equipment. Only half of them attempted to use their radio knowing that they were lost. Thirty-eight percent activated their P.A.S.S. Eighty-two percent searched for an exit.

And I was talking to someone a littler earlier today -- and I say this all the time -- I've been in way too many fire failure fatalities and funerals. And when I go to them, I go to the building -- and Monday morning quarterback is real easy, so I'm not criticizing them. But the one thing that's always stuck out from the first one I was at in Lovett, Texas, to the most recent one, as you go into the room of where they died and there's prints, handprints, glove prints along the wall. And why is that? They're looking for what they were trained to do; the window, the door.

And in most of those cases, the only thing that kept them from being alive today was a half-inch piece of sheetrock. And you know, but they weren't trained to go through that, so they weren't -- they were trained -- in training they were told to look for the window, look for the door and that's where you get out. And when you're scared to death, you revert to your training, and that's what they do. You see the handprints. All you needed was a strong shoulder. You didn't need any special tools to get through a

half inch piece of sheetrock or plaster in that.

Anyway -- but they did search for an exit. Eighty-eight percent of them made noise with a tool. Make noise, I mean that's what you got to do for people to find you. As you heard from -- earlier from the beach that, you know, flashlights don't work. You can do all the lighting you want, but 3 percent tried to use their light. Nine percent followed the hose line. Four percent activated their E-trigger on their radio. One percent initiated breathing techniques. One percent or less, one person lost their radio. One lost their glove and so on and so on.

But the most important statistic out of this -- 160 people -- is six of them lived. Six of them lived. So, you know, do the math. 154 firefighters for that training scenario would have died if that was a real incident and because of lack of training.

And just another quick -- so again, anything that's going to keep our firefighters alive, whether it's the combination device we talked about this morning or the rapid approval of allowing for what's

happening out there with buddy-breathing, is certainly what our union desires.

And just for a quick catch-up for Chris. There's about 63,000 firefighters in California.

MR. ANAYA: Oh, cool.

MR. DUFFY: 30,000 of them are career; 33,000 of them are volunteer, if I remember right. So that's about the numbers and that doesn't include the Wildland Federal Firefighters. But it does include --

MR. ANAYA: You're the first one to give me the answer. And now, see, I'll call you the next time.

MR. DUFFY: The only reason we know is because we did an equation for the cancer work that was out there. But the other issue that you hear of these fire brigades, let me tell you the real story about the fire brigades.

The fire brigade standard that's in OSHA was not written because industries said come on in and regulate our fire departments. We wrote it. And we wrote it because we knew what the OSHA law said, which as Chris said is right, that it didn't cover public

employees. It only covered private sector employees. So we had to write a standard for private sector fire departments, which were these, quote, unquote, fire brigades. And we did that, and it was passed in December of 1980.

And the reason is because the OSHA Act, as Chris said, allowed the states to it take back -- when Nixon signed the OSHA law, it took all the rights away from states to do any health and safety in their particular state. It was all done by the federals, with the caveat that you could take it back, the feds will give you money. You had to mirror the standards that the federal government -- then they called it a state plan. But you also -- if you did take it back, you had to provide for the public sector, as you did for the private sector.

So 28 or so states then got immediate coverage for all the -- for public employees and hence, there was a private standard for private fire departments. That became the standard for public fire departments. So that's how that occurred. So it wasn't that it looked at industry, because you know

what, it didn't.

The problem with the fire brigade standard, it was signed in 1980. It's that old. So nothing's been done at the federal OSHA level for 30 years for firefighters. There was an attempt to do that two years ago; it was put on the regulatory schedule. And just last year, it was removed from it again. And so we've been working with the Secretary of Labor and the Assistant Secretary trying to get that back on their regulatory schedule. But with the current climate, who knows what changes are going to be made in that standard. We're not certainly hopeful for that. So I don't need to sit here and blabber, because I'm sure you have more people to say --

But we are certainly in support of this, and we encourage NIOSH to move as expeditiously as possible to find a way to allow it. Because you know what, without you it's going to be done anyway. And we might as well do it the right way. So thank you.

MR. SZALAJDA: Thank you, Rich.

Any other comments from the floor on this particular topic?

John, can we check LiveMeeting?

Okay. For LiveMeeting participants, we're on the viewpoints and experience on the current policy if you have any comments to provide on that particular subject.

MR. HOROWITZ: Hello.

MR. SZALAJDA: Yes. Go ahead.

MR. HOROWITZ: Hi. This is Mike Horowitz with Cal/OSHA. Just to confirm what Chris and Anaya said, that Cal/OSHA does by policy cover all employees in the state, other than federal employees.

So we do cover public fire departments with the same and very similar standard regarding buddy-breathing to the federal OSHA because -- but we kind of chose to -- even though the federal standard, as Chris said, was just strictly the brigades, because we cover all employees when we had to adopt the federal standard regarding fire brigade, we chose to extend that as well to our other fire departments, the public sector fire departments.

And having said that, I think that Cal/OSHA would be in agreement with those who would like to see

some kind of standardized testing by NIOSH of the adequacy of the systems that are being sold by the manufacturers. We would agree with that suggestion, I'm sure. Oh. Not authorized to speak for the division per se. But I'm sure that should we submit an official statement, it would say something to that effect.

MR. SZALAJDA: All right. Thank you very much. Any other LiveMeeting comments?

Any social media comments?

MS. POWELL: (Nods head from side to side.)

MR. SZALAJDA: Okay. I'd like to take items 2 and 3 and combine them with regard to any research that's needed to support recent -- reaffirming or modifying a policy, as well as identifying any research that may not have already been discussed here today that might have been done related to the subjects. So I open it up to the panel if they wanted to add anything to the research aspect.

MR. ANAYA: Well, I guess we're referring to the research of the policy, research of --

MR. SZALAJDA: Well, research related to

information that you think we should have to address making changes to the policy that we haven't already addressed as part of your presentations today.

MR. ANAYA: Well, I will go ahead and say something, take the opportunity.

I just want to formally say that indeed support revising the policy, modifying it, to start reviewing and certifying something that's being used and will be used, even if you didn't approve it.

As Rich Duffy pointed out correctly, we as firefighters, we're going to find a secondary means to protect ourselves, should something happen. And I think that -- let's assume that Cal/OSHA or federal OSHA or everybody disallowed the use of buddy-breathers, let's just pretend that's the case.

Firefighters are going to find a way to devise something to hook in, create -- make a homemade device to make it work so they could use something. And you know, you go into survivor mode and you think about it -- you get scared one time and you never forget that day. And so you're going to come up with a device and maybe modify your SCBAs illegally, so

that should something happen, you can hook up with your partner.

We don't need to take that route. We don't need to go there. We have something that's actually approved, at least to a certain extent, by OSHA. And in California, it's approved to not be a problem, and maybe Mike can get back on the phone here and verify if he's heard anything about any kind of fatalities resulted from the use of buddy-breathers. I don't believe there are. The last I heard, there hadn't been. But I think it's time to move forward and begin certifying this stuff by NIOSH, the third party that should be testing this, this equipment.

MR. SZALAJDA: Thanks, Chris.

MR. KALLER: I'll just kind of piggyback on that.

And one of the things that bothered me when we started down this road -- and you heard our committee chair talk in the beginning about -- and this is his terminology, and I agree with it. It's like we have this going on. It's a "wink wink, nod nod." And we know it's happening, but we're not

talking about it. And NFPA isn't approaching it because it's not going to get past NIOSH.

And the thing that concern me the most is we're going to do our best to go down the road we're on now, and they're going to take things away from this meeting as NIOSH and the people -- the comments that were made and the things that were presented here. And then you're going to have your own information that comes in off the docket and all the comments people make. And then you guys are going to get to sit down and make a decision on the ease of doing this or the importance of doing this or if it's feasible and -- there's a ton of things to weight in on. Like the one gentleman said, he goes, they really feel like this was an issue to where they're afraid the guy is going to walk -- walk opposite directions and pull their facepieces off.

Well, we kind of got around that problem, you know, with technology. But you know, there's still issues with people using it. The scariest part for me is, is let's say, NIOSH decides, okay, this isn't going to happen. Now, it comes back to NFPA.

And are we going -- as NFPA, are we willing to set there and go, okay, we're going back to "wink-wink, nod-nod," which is how we got to this place in the first place, not wanting to be those folks. So then at the opposite end of the spectrum, we say, well, we're following NIOSH and we're just going to say this ain't happening.

The minute we do that, the people that own SCBAs, that have them now, are going to never want to give them up, because they can't replace them with something like. And then the other thing is that Chris alluded to -- and I should have included one in my program. But if you go on the Internet and look under Mayday devices, you will find a company that sells basically some type of rubber hose with a stopper in it that is designed to plug into different facepieces of different manufacturers and seal it up so you can plug it in your facepiece and stick it in your turnout coat, like we did when we had the corrugated tubes, you know, which is of almost zero value to that guy actually living.

So if NIOSH does not move forward with this

it's going to really come back to NFPA and go, okay, are we going back to "wink wink, nod nod"?

If we don't, I think in general we're all going to lose some credibility with the fire service in general, because we're not giving them what they're asking for. And secondly, we're going to create a whole nother set of problems by they're going to find a way on their own, which is what we're trying to get away from is don't build your own devices. We'll build you something or design something that can be built and tested that works.

MR. SZALAJDA: Thanks, Clint.

Any other comments from the panel?

Anything from the floor with regards to the research topic?

MR. DUFFY: I have to get up to the mike.

MR. SZALAJDA: Yes, you do.

I think it's possible if you want, you can bring the stand further back.

MR. DUFFY: Duffy, Firefighters.

When you look for research, I don't want you -- you go out and do the search for -- google

search for devices. I think you have to look at some of the other experience. Like you can look at NIOSH reports, and I know the committee went and looked at NIOSH reports as specifically related to buddy-breathing devices.

However, you look at the NIOSH reports of people that -- the firefighters that died because they didn't use a device or a device where that wasn't used. I think the Deutsche Bank fire in New York City where two firefighters died and twenty -- I think 28, 29 were this close. I mean, it was real close and they had to -- for a number of reasons, there would have been many, many, many more firefighters died running out of air.

The Dollar Store fire in Memphis, so that will be under fire in Memphis kills -- or excuse me, in Tennessee kills two firefighters. Because that's how NIOSH's writes up the reports. So it's the Dollar Store fire in Memphis, where one firefighter went to his buddy and says, I'm running out of air; could we share air and unfortunately the response from his partner was, my bell just went off. I'm out of air

too, you know.

But there's lots of scenarios like that that support what the committee has addressed and I think just don't go looking for -- just because it's not there under devices doesn't mean it's not there, from experience, because there's day after day after day when firefighters run out of air. Certainly supports what we talked about this morning, as I said, the combination unit and certainly supports the capability of sharing your partner's air. Thank you.

MR. SZALAJDA: All right. Thank you, Rich.

Any other comments on research needs?

MR. CLOONAN: Good afternoon. Terry Cloonan, NIOSH.

I would offer that the research agenda should look a little bit closer -- the practical application of this device as it's used in training scenarios, whether it be at the fire academy level and other types of training environments, to ensure that there's a strong database to support the end state cautions and limitations if, in fact, they are in support of -- in a final standard.

MR. SZALAJDA: All right. Thank you, Terry.

Okay. I think, John, let's try the LiveMeeting.

Any comments from our LiveMeeting participants on the research questions?

MR. ROSSOS: Good afternoon. This is Dan Rossos again, Jon.

MR. SZALAJDA: Hi, Dan.

MR. ROSSOS: How are you?

MR. SZALAJDA: Good.

MR. ROSSOS: I just wanted to add -- many of the individuals that are there today don't know we have slipped a cycle in 1981. And what that means is we have submitted to the Standards Council, the NFPA, and they have given us approval to basically extend 1981 from a five-year cycle, this time, to a six-year cycle. We've added one more year.

The reason we did that, in part, was because of the issue before us now with buddy-breathing and with the possibility of this review taking place. And so even though we have slipped that cycle and we have now identified 1981 as a 2013 standard instead of a

2012, we are still on a very, very limited timeline.

And so I would just, obviously, encourage everybody who's there today and everybody who's listening if they have their comment and they have their concerns, positive or negative, to please make them known so that we can get the information in NIOSH's hand, they make a decision, and likewise then give us a foundation for direction with the NFPA.

I thank you again for today. And this is where this had to come, and I'm so encouraged where we're at today. Thank you very much.

MR. SZALAJDA: Thank you, Dan.

Any other LiveMeeting comments?

Okay. I think you can kill the LiveMeeting.

We have one social media comment now.

MS. POWELL: Hi. I have a comment from a David Spelce from the Navy, and he states:

It does sound like NIOSH does need to reevaluate this issue, especially with development of the EBSS, which sounds like real life saving devices for the fire service.

MR. SZALAJDA: Thank you, Dave.

All right. Well, the last question or at least -- and we're running out of questions, so hang in there with me -- is related to recommendations on SCBA technology and performance enhancements that would enhance user safety during the emergency use of a buddy-breathing device.

And on this subject we're looking for identification of performance requirements that you feel would be important for us to consider with regard to addressing the policy, and I think it's kind of a two-edged sword that I'm looking at it.

One is, though, obviously we need a user perspective on what they would want from a performance standpoint, but also I think from the manufacturing community that's here, you know, with them being able to address the technical requirements as far as how we would devise the performance requirements.

So I'll start here with the panel.

MR. FLINT: I'll beat Chris to the punch.

The feedback from the survey, as well as discussions within the committee, pointed out that there are a number of sort of commonalities, a number

of concerns that a lot of people share about EBSS, the first one being interoperability.

This is a technology issue with all the different manufacturers using different levels of different pressures of intermediate air. Not that it can't be fixed, but I would hope that maybe not this cycle, but by next cycle we would have a system where any manufacturer would be interoperable with any other.

Short term, though, having the ability to supply other members of your agency, your local response group is the most important part of -- but then the suggestions from people, actually users, had been focused in on ease of use, being able to use the fittings using gloved hands, being able to use the fittings when stressed. Now, a lot of this is all based on training and experience and muscle memory and repetition of the exercise. But I think that all these things lead in toward an easy to use, fairly simple operation, where you're not going through a number of different steps to make a connection.

So I think those two issues there, ease of

use and interoperability, are the two major issues that I'm pulling back from the folks that I'm talking to.

MR. SZALAJDA: All right. Other panel comments?

MR. ANAYA: I would just suggest working with the 1981 committee and where they can put their heads together and make recommendations through that means, because I'm sure there's a lot of things to consider, way more than I can think of right now.

MR. SZALAJDA: Thanks, Chris.

Any comments from our participants here in Pittsburgh?

MR. HASKELL: Bill Haskell from NIOSH NPPTL.

Perhaps, on that last bullet another opportunity that should be considered is technology performance enhancements above and beyond buddy-breathing can be used in an emergency, such as another source of air, a different way to partition emergency air, other technologies that would give you that emergency air so that you'd have another alternative to hooking up to someone else's system.

MR. SZALAJDA: Thank you, Bill.

Any other local comments?

LiveMeeting?

MR. ROSSOS: This is Dan Rossos again. Yeah. Just to kind of touch on what Bill had just mentioned, some of the issues that have come up as potentials with buddy-breathing.

We have worked for a number of years with a task group for escape systems, personal escape systems for a firefighter in distress, running out of air.

One of the ideas that had come up regarding that that perhaps could combine with buddy-breathing would be a separate chamber within the SCBA, an additional compartmentalizing of SCBA air that can only be accessed in an emergency, that could be used for the individual that's wearing the SCBA and/or used as a buddy-breather system.

The concern with that was that you would have individuals accessing that compartment, or that set aside air, to just maintain their ongoing EOPS operations. And part of the stipulation that had been mentioned were, perhaps, if that emergency air were

accessed at any time, it would render the SCBA unusable until it was reserviced and, perhaps, that some type of a notification would be sent forth to a near miss situation or something like that database.

That was probably one of biggest ones that had come up, that potentially, and accessing the low pressure side and/or the high pressure side, giving you the option to transfill or to just maintain supplying to the mask.

MR. SZALAJDA: Thank you, Dan.

Are there any other LiveMeeting comments?

Social media?

The other discussion topics are related to recommendations on technology safeguards and also viewpoints on minimum standard requirements.

I think from our perspective -- and I think it follows on the point that Chris had raised with regard to the work that NFPA has done is that if NIOSH is going to pursue the modification or other disposition of the policy, what types of evaluations do you feel would be important for us to consider as part of a certification process to evaluate the

fittings or connections or other pieces of the apparatus that would facilitate buddy-breathing?

MR. KALLER: A couple of things that came to mind were -- as in some of the other things we do between NFPA and NIOSH, NIOSH does very similar testing, what NFPA does. We just do it at a different flow rate. So I can see NIOSH possibly testing at, what, 40 liters is pretty much your normal flow rate for testing and doing that and then at NFPA level would be done, the same similar time test would be done at 103 liters per minute.

In touching on what Dan Rossos talked about with the partition cylinders -- and yes, that has been talked about in there -- you know, even within that, there are some technology issues in making that work and, you know, if you want -- I hate to always keep bringing the human side into things, but people like to touch on that. It's like is, you know, is there have to be technology built in. The guy uses it mis -- inappropriately that there's a price to pay that that SCBA has to go to shops to be reset, to try to keep them from doing that. And now we're adding

more technology to the problem.

And then the other thing that that doesn't address is you may have more air, but if it's a failure of some type that didn't allow you to get your initial air out, more air isn't helping you anyways.

So although I think that's, you know, something that the committee has wrestled with, you know, certainly in the fire service, we have a larger multitude of cylinder sizes and choices.

The cylinder technology has advanced to the point that what you used to do weight-wise with a 30-minute cylinder, you can now do with a 45. So the people who it's all about the weight, you know, that issue has been solved somewhat with technology if that was your major concern.

But one of the advantages of EBSS is it's allowing for immediate air and it's allowing for a system failure, that it can possibly overcome that system failure.

And then, you know, there's lots of possibilities. With the way things are done, we have new SCBAs -- and I explained it to a few people

sitting there, showing them an item similar to ours. On our RIC bag we have different fittings that are on the EBSS. One side of our RIC Y block, we have the universal air connection. That is our first choice to use if you're coming in with a RIC bag and provided the guy does not indicate it's a system failure. After that, we can take and pull our Y block out and plug into his buddy-breathing side, his female to our male side. However, on our Y block, our female is different than the RIC side. Because if all else is failed, we can disconnect from the second stage regulator and plug it into that and now we can cut the whole BA off the guy and nothing is left but the facepiece and the second stage regulation. And now he's on the RIC bag operating on almost a devoid system of that BA with nothing left but that.

And that was just our choice to have three possible options that when you show up with that bag you have, you know, access to that guy. You know, I keep saying -- we're talking about scenarios that are close to never happening, that some guy is trapped to the point that all you can see is his facepiece. But

then at the same time, firemen being what they are, we look at every possible scenario and find out how we can work around it.

But that also takes me back to there's things that EBSS can do for somebody that more air can't do, that UAC can't do. And it's just another option. We're not telling you you have to have it. It's for departments that believe they can use it safely.

MR. SZALAJDA: Thanks, Clint.

Any other comments from the panel?

MR. DUFFY: I lied. Duffy, Firefighters.

I think the little you need to do -- you need to do as little as possible. I think everything you have right now is already NIOSH approved. You have the UAC valve. The UAC valve is there. That's part of the approval process right now. So the only thing you really would be testing is the hose. And I look at this as a filling line hose.

You don't certify filling hose lines from the cascade system or however they're filling the hose up. So I think there's very little approval needed --

and I'm saying that, because I know the approval system and we could be older people than we are now, by the time that gets through. And I think it's just the recognition that this is a tool.

And again, I can't overemphasize this. Buddy-breathing devices are a hose line between UAC. RIC valves is just one tool in a very large, large toolbox that needs to be done, and the firefighters aren't trained to survive Maydays. I know the fire ground's survivor tool is RIC. This is not going to save their lives. So it's one part of that. But I think there's very little in part of the certification process, if anything, that needs to be done right now. Because there's nothing -- unless there's some new devices.

Now, I don't think any performance standards out there should inhibit devices. And I can think of lots of things that in effect will be done in the future. We know what we have right; we begin.

There's the future needs to look outside the box. I think it can be a self-contained hose line within everybody's breathing apparatus. It could be a

one-time use only. I know we can have extra ones training. But because it's probably only going to be one-time use and -- or something that's completely integrated to make it a lot easier. And I think we're moving towards new products all the time. So I wouldn't want anything in the performance standards to be design restrictive and to inhibit any such new innovation.

So in terms of what you have right now, you got the UAC valve there. It's already been certified. And I don't think you need a whole lot more. Thanks.

MR. SZALAJDA: Thank you, Rich.

Any other comments from the floor?

LiveMeeting?

Any other comments on the slide from the LiveMeeting participants?

Okay. Social media?

MS. POWELL: No.

MR. SZALAJDA: No. Okay.

Well, with that, what I'd like to do is thank Deborah and William and Clint and Chris. I think it's obvious that they put a lot of time and

thought into what they presented today on a very sensitive subject, and I think they handled the information very professionally, and I think it definitely expanded our knowledge base with regard to the subject.

So with that, thank you.

And John, I have a couple wrap-up remarks, if you can bring up the overview presentation again.

The Docket for Buddy-Breathing is 147.

Just as a reminder, the stakeholder meeting for March 29th, continue to check our website, the NPPTL website, for additional information.

We'd appreciate hearing back from you. One of the ideas that we'd like to consider -- and some of you may be aware that at the recent Industrial Hygiene Conference that was held in Denver this year, we conducted a training seminar for CBRN respirator selection, use, and maintenance. And if the stakeholders feel that that would be valuable, we're looking at possibly conducting an abbreviated version of that course here on March 30th. So if you would be interested in having that training made available,

we'd like to go ahead and try to schedule that for a follow-up to the stakeholder meeting on the 29th.

I also wanted to acknowledge a couple of individuals, and unfortunately they're not here in the audience today. But they're individuals that made a contribution to our program. A couple of them are from NPPTL and one is from the NFPA. And those individuals are moving into one of the phases of life called "retirement," which I hear is a very delightful state to be in. But I don't know if I'm ready for that or not.

But Mike Monahan and Lynn Rethi from NPPTL are retiring at the end of this year. And both of them made a huge contribution to our program.

For those of you who know Mike, Mike had worked with Calgon for many years prior to coming to government service. And he was very instrumental in not only working with the CBRN program and then the definition of the requirements for the CBRN respirator, but also with helping us establish our certification facilities at NPPTL.

Lynn Rethi is the Deputy Branch Chief for

the Technology Evaluation Branch, and he has played a role with self-contained self-rescuers in mine safety and health issues for many, many years. And their expertise will definitely be missed.

Also, I want to acknowledge, for the record, Bruce Teele and his contributions from the NFPA, not only to NFPA's program and standards development, but also his support of the NPPTL mission. And as I had mentioned up front in my opening remarks, it is definitely -- it's a program mission. It's not necessarily an NPPTL mission, but it's an activity that we all participated in. And I think Bruce's contributions will be felt in this community for many, many years to come.

So with that in closing, I wanted to give one last call opportunity for anyone who would like to make a comment with regard to the public meeting topics today.

If you focus at the end of the Internet link, that's the docket number associated with each of the topics that we discussed today. And it would be note that the timing of the closing of the docket,

it's all integrated into the web page. The instructions for how you make submittals are included there as well. And as information is forthcoming, it will be added to the docket.

So with that, I'd like to at least open up for here in Pittsburgh any last comments on the regulatory agenda.

MR. ANTUNES: Thanks, Jon. Will Antunes with Structural Composites Industries.

Thanks for putting this on and especially for NIOSH taking a second look or another look at CFR 42, Part 84. One of the interesting things that I heard today, and I've heard in some of the NFPA meetings as well, is a lot of focus on cylinders.

And as a manufacturer of cylinders, we believe that CFR 42, Part 84 could be substantially improved with a component part approval -- cylinders, specifically. And because so much of what we're talking about, whether it be the morning session or the afternoon session, has to do with cylinders.

So much of everything that's SCBA related has to do with cylinders. So we believe that a good

strong look at a component part approval for the CFR would make sense and we also believe -- and know anecdotally through our own information gathering -- that much of the fire service, in fact an overwhelming portion of the fire service, would welcome it as well.

So we very much encourage NIOSH to do that, to create a component part approval process, similar to, say, what the Federal Aviation Administration has for cylinders aboard aircrafts of all sorts, so that many of the benefits by doing so could be achieved in the fire service. Thank you.

MR. SZALAJDA: Thank you, Will.

Any other comments related to regulatory agenda?

We'll hold LiveMeeting until the end.

Any comments from our Pittsburgh participants on the CBRN Combination Respiratory Unit?

Okay. Any comments on the SCBA Emergency Escape Support Breathing or the Buddy-Breather System?

Okay. John, we'll check LiveMeeting.

Any comments from our LiveMeeting participants on the public meeting topics?

Okay. Social media? No.

Well, with that, I'd like to thank you all for your participation. I hope it was as informative and helpful to you as it was for us. And we'll look forward to seeing you next year. Thank you.

(Whereupon, the proceedings in the above-captioned matter were concluded at 4:19 p.m.)

CERTIFICATE OF REPORTER

I, Delores M. Green, reporter, do hereby certify that I was authorized to and did report in stenotype notes the foregoing proceedings and that thereafter my stenotype notes were reduced to typewriting under my supervision.

I further certify that the transcript contains a true and correct transcript of my stenotype notes taken therein to the best of my ability and knowledge.

SIGNED this 19th day of JANUARY, 2011.

Delores M. Green

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