P A R T I C I P A N T S

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Lee Smith
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SPEAKERS:

Adele Abrams
Thomas Broderick
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I N D E X

DEPARTMENT OF LABOR

PUBLIC STAKEHOLDER MEETING
ON CONFINED SPACES IN CONSTRUCTION

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Keynote: "---" indicates inaudible.

M O R N I N G S E S S I O N

(8:17 a.m.)

MR. SWANSON: Can you hear me in the back? Apparently, industry trusts us more with confined space than with some of the other standards we've discussed here in the past year or two. The turnout is somewhat less than what we expected this morning.

Good morning gentlemen. We'll make the introductions quick. My main task as this moment is to introduce my boss, Charles Jeffress and give him a moment or two to tell us all why this is something we do wish to hurry forward with. Charles?

COMMENTS

by Charles Jeffress

MR. JEFFRESS: And I see hurry forward is being used in the sense of hurrying, is that right?

(Laughter)

We're committed to a series of these stakeholder meetings on confined spaces in construction. Today here in D.C. and next week in, is it Boston, next week or Houston? Houston next week. And then the end of the month up in Boston.

The idea of being this isn't a new subject for any of us in terms of the hazards of confined space in construction. But since OSHA's aiming to put out a notice in

July of next year, we want to assure that folks who have a particular perspective that you want to make sure we know and understand and consider before -- put a notice out to have a chance to tell us your views on this. We are going to be open today in terms of the issues that we're interested, things we're concerned about, what we'd like to hear from folks on. We'll do this also in Houston and in Boston.

Those of you who got a notice of the hearing should have also got a listing of the issues that we want to hear from people on, the things that we're considering and concerned about as we develop our proposal. We're looking for the kinds of confined spaces people are encountering in construction, what kind of hazards are there.

We know that, obviously, the asphyxiation is the single cause of death in confined spaces. So we know something about what that means, about oxygen depletion. We know that the physical agents inside the spaces, the electricity of mechanical hazards, engulfment hazards are the second leading cause of deaths in confined spaces.

So we know something about what the hazards are that are killing people, but we're interested in hearing from folks as to what your observations are of what the characteristics are of these confined spaces, what the hazards that you see are, what kind of obstructions you see in these spaces that need to be controlled. Essentially, what are the kinds of

things that we need to deal with in our proposal.

A couple of specific comments that -- specific areas that I would urge people to talk about. If you have a thought on it. Things that may be different from what we have dealt with in the general industry confined space, for the engulfment hazards, do we need an early warning system for things like sewers? How do we deal with engulfment hazards? Something that we haven't dealt with in general industry and something that would be, perhaps, differently handled in construction.

Continuous monitoring, in general industry we have periodic monitoring of the atmospheres, monitoring equipment that's developed significantly since the general industry standard was adopted. So there are ways now, relatively inexpensive ways to do continuous monitoring of atmosphere in confined spaces, is something we should move to in construction. Would be particularly interested in that.

Also, in general industry we don't allow anybody to monitor any more than one confined space. Be interested in people's views here in construction, can one person monitor more than one space at a time? Or more than one permit of required space? How many different confined spaces can someone adequately monitor and be available to assist if they are needed?

So those are some particular areas that we're

interested in comments on. I'm sure other folks will flush them out here today. And I want to encourage those of you who are here to take the opportunity to talk to OSHA about what it is you see, or what advice you have. If you didn't come prepared to speak, particularly since it's such a small turnout, we can keep it relatively informal and be interested in comments that you have.

But again, thank you for coming to the OSHA folks who are working on it. This is a very important standard. I was reminded by Del as I got up here that MSHA put out a notice in 1989 that they wanted to do something on confined spaces in mines. And are still working on it. I'd like this not to go that long. I'd like us to act expeditiously and we have a July 2001 date for a proposal. I appreciate what you've done so far. Let's act with all deliberate speed, or in a hurry, as Bruce says and get this one out too.

Thank you very much.

MR. SWANSON: Thank you.

(Applause)

Yes, we have the room until noon, so the five minute limitation on comments will be waived, I believe. Brenda will be open minded about that. But let me turn this over to Brenda McLahan from our Philadelphia office, who will be the facilitator for the remainder of the morning. Or as long as events call for anyhow.

And let me echo Charles' request that those of you in the room that didn't intend to speak, will have an opportunity. We also waived the sign-in rule. So if you'd like to comment, join us please, this morning. Thank you. Brenda?

FACILITATOR McLAHAN: Okay. First can you hear me?

(Nodding of heads)

Okay. Go over a few housekeeping issues. The restrooms are out -- well, probably that door is better. And if you see the sign for the daycare center, it's in that general area. The cafeteria is on the sixth floor, the coffee shop is on the fourth floor. I expect that we'll break about 10:00 for 15 minutes or so. And, let's see, I think those are the only housekeeping issues that I have.

Today we have Lisa Burns, is sitting back in the sound room. She will be taken verbatim notes. But we're not assigning the notes to any particular -- we're not identifying the source. So we will have a record of this meeting.

There will be a summary prepared and a copy of that summary will be mailed to each speaker. And anyone else who's interested in receiving a copy should contact Lee Smith. And he will see that that's sent to you.

As Bruce told you, I'm going to facilitate the meeting today, so my mission here is to help you get the information and the issues and concerns that you have, get

them out and share that information with OSHA.

We have a few ground rules and they're pretty basic that are in all meetings. Everybody's to respect everybody's ideas. We'll have one person speak at a time and we're setting aside about 15 minutes for each speaker. Given the number of people that we have, if you need more than 15 minutes, I'll be open to that.

And we are going to do our best to stick to the schedule. Okay, I'll introduce our speakers. We'll get started right away.

The first speaker is Adele Abrams. She's with the law firm of Patton and Boggs, but she's here representing the American Society of Safety Engineers. Okay, Adele?

PRESENTATION

by Adele Abrams

MS. ABRAMS: Okay, thank you. This is a different approach to a stakeholder meeting than I was expecting, but I'll give it a shot here. I am, as Brenda said, representing the American Society of Safety Engineers, which is one of this country's largest safety organizations. There ar currently about 33,000 members of ASSE nationwide and internationally. And they include a construction division. So ASSE has a direct interest in the development of a confined space standard.

ASSE commends OSHA for having this stakeholder

meeting to obtain input from the regulated community and from safety professionals in particular before it develops its proposed rule. And we will be having a representative at one of the other stakeholder meetings as well. Who was, actually, directly employed in the construction industry. Although, I do come from a construction background as well.

ASSE does support development of a confined space standard for the constructions industry. And we encourage uniformity between the construction and general industry sectors.

Generally, I guess, I would like to make the recommendation that OSHA looks strongly at the voluntary consensus standard that's out there, which is the ANSI-Z117 Standard. I happened to have brought a copy with me here and I believe we've already given a copy of this to Lee Smith. It's entitled, Safety Requirements For Confined Spaces. And it was promulgated in 1995, so it's relatively up-to-date.

I've gone through and reviewed this. I note that OSHA had several people who were part of the group that developed this standard. And ASSE, in fat, served as the Secretariat for this ANSI Standard.

As you probably know, several years ago, the Technology Transfer Act of 1995, which is Public Law 104-113, included what's known as the Morella Amendment, which encouraged agencies to employ voluntary consensus standards

whenever possible and appropriate rather than, more or less, reinventing the wheel. And that ties in nicely with OMB's circular A-119, which is federal participation in the development and use of voluntary standards.

What this does is if there's a consensus standard out there, the agency should look at it. OSHA is not required to adopt the consensus standard as is, but they should at least give some serious consideration to it and articulate why it's not appropriate if they choose to go off in a divergent manner.

But the consensus standards do represent, as I say, a consensus. It's not necessarily 100 percent agreement on the part of the industry or the affected labor groups. But these things are developed with a great deal of work and thought and, I think, can provide a good template for OSHA to use as it goes into its rulemaking activities here.

With respect to the general questions that were asked, first of all, the view of the society is that the confined space rule does need to be revisited because currently the approach that construction uses is not consistent with 29 C.F.R. 1910. We also want to stress that qualified safety professionals should be doing confined space work, as Mr. Jeffress indicated earlier. Confined spaces are a significant cause of death in the construction industry. And I might add, also, in the mining industry. And you need

to have people who know what they're doing, in charge of doing the testing, the monitoring, deciding which spaces should be permitted spaces and the like.

Not necessarily that you need to be a certified safety professional or have a PE in safety, but there should be at least adequate training and qualification of the individuals who are charged with these important tasks.

OSHA has put forth five questions, or issues, to be addressed here. And I'll go through these very briefly. First of all, they've asked what examples of confined spaces. And I would point to what A-117 says and its examples of confined spaces are tanks, silos, vessels, pits, sewers, pipelines, tank cars, boilers, septic tanks and utility volts. And this is not a totally inclusive list, but these are the primary types of confined spaces that would be encountered.

The defining characteristics of confined spaces, of course, would be restricted entry and exit, which the ANSI standard defines as physical impediment of the body, where you would have to use the hands or be a contortionist of sorts to enter or exist from a confined space.

You also would look at what the potential or the known hazards are the space. And these, of course, include engulfment, which is one of the primary hazards, as well as hazardous atmospheres and the toxic environments as well. And examples of obstructions, you know, again, I think that's

pretty much self explanatory. That would be pipes, it would be design, and that is one thing that I guess bears mention here.

And I'm parroting from ANSI once again, but in the forward, which is not actually part of the standard, it notes that the critical role of design can influence the safe entry of confined spaces and that designed efficiencies can often increase the risk for entrance.

And this, I think, goes to the obstruction as well. Because if things are poorly designed, or a design with built in obstructions, you are necessarily going to be increasing the hazard to employees who are going to have to enter those spaces.

And some of the designed efficiencies identified by the ANSI Committee are the means of entry to spaces which are too small, improperly located, or that complicate or inhibit escape. Spaces which are convoluted, unnecessarily obstructed or hazardously configured. Internal clearances which are too tight for safe passage, space penetration distances that are excessive without alternative means of access or escape.

The absence of appropriate devices to isolate all energy sources from the space, know provision for vessel mechanisms or devices to prevent loose materials from bridging or compacting, and lack of considerations for features that could enhance space ventilation effectiveness. And then

finally, general structural weaknesses in the walls, floors, ceilings, or pipes that could contain gases, liquids or steam. All of these are things that can increase hazards and risks associated with work and confined spaces.

With respect to the second question about engulfment hazards in sewers that often cannot be effectively isolated and whether an early warning system is needed, ASSE has not really developed a position on this. You know, ideally, full use should be made where it's technologically and economically feasible of all of the advanced technology. And early warning is definitely better than late warning. I think that's a no brainer. But we know that some of the people involved in sewer construction are going to be participating in these hearings. And we would like to defer to them on that issue.

We do believe, however, the technology is currently available to address early warning issues. And, I guess, the question is whether it would be feasible in application to the types of confined spaces that are present in the sewer industry.

The third issue was for atmospheric hazards. The general industry standard allows period, rather than continuous monitoring and OSHA has asked whether continuous monitoring would better protect employees than periodic monitoring and whether there are labor costs associated with the use of continuous monitors. And, finally, what the cost

would be of continuous monitoring.

ASSE believes that there is no question that continuous monitoring would provide better protection for employees and the cost of such monitoring systems has continued to decrease. Although, there are significant variations in such systems. We looked through best safety and security directory and the estimates that we saw in terms of cost really range from $1,500.00 to $3,500.00 per unit. And this would be dependent upon the accessories and the instrumentation needed to detect hazards and to provide adequate warning.

You know, again, larger companies are going to be able to benefit by the economies of scale, purchase and use of such systems would likely work a greater hardship on smaller employees. But ASSE, frankly, has always taken the position that you need to have uniform safety rules and you can't provide greater levels of protection to an employee simply because they work for a larger company.

So the agency has to factor in what percentage of the affected employers would be small businesses as, indeed, it would need to do under SBREFA anyway and make the determination based on the universe of covered employers whether or not something is technically and economically feasible.

But the continuous monitoring systems are out there

and if they are not technically or economically feasible now, they might be in five years. And, perhaps, that issue would need to be revisited down the road.

With respect to whether there would be a labor cost savings, possibly. If there could be electronic communication to those working in a confined space. But we don't really have any hard numbers to give you on that and that's something, I think, probably the unions could provide input on.

The fourth issue is are there ways to make it easier for small businesses to protect their employees from confined space hazards without compromising safety. Unfortunately, probably not. As I said previously, ASSE's view is that safety laws should be equally enforceable for any business, regardless of size and, certainly, confined space hazards are the same regardless of the employer's size.

You know, but you do need -- if there is an easier way to do this, than large employers should be able to afford themselves of that approach as well. You know, if you adopt something that is heavily technology focused, it is going to work to the disadvantage of smaller employers, you know, and some might be put out of business as a result.

So, as with anything, this is an issue that the agency is going to have to evaluate in terms of cost and benefit within the confines of the OSHA Act.

The last issue was whether OSHA should permit and attend and to monitor more than one permit required confined space at a time and allow an attendance or entry supervisor to serve simultaneously in both roles. The first subquestion that was posed was what was the maximum number of permit required confined spaces an attendant can effectively monitor. This is a tough issue because you have to -- it's going to be very site specific. How close in location are these permit required confined spaces? What are the hazards involved? You really can't predict an exact number that would be appropriate across the board.

What we would suggest is that the employer would need to do a credible hazard assessment analysis, have a knowledgeable person, preferably a safety professional, look at the sites and then make a decision based both on the text of the standard and on their professional expertise, erring on the side of caution.

You know, listen to what the other stakeholders have to say on this. I don't know if it's possible for OSHA to do a survey and find out typically how many confined spaces exist contemporaneously at a single worksite and what their proximity is to each other. But these are all issues that should be evaluated.

The next subquestion was whether any emergencies have occurred in which an attendant's ability to perform

rescue related tasks was compromised because they were monitoring another site. ASSE does not have any anecdotal experience or data on this. We do suggest that you ask NIOSH whether they have ever studied this issue because I believe they have done some research in the confined space area. And put this out there for more general comment, perhaps, on the website. I'm sure if there have been situations like this, the workers involved would be more than happy to share that information with OSHA and simply getting the word out there that you're seeking this type of information.

The next is what experience does the construction industry have with attendants or authorized entrance serving as entry supervisors. And, again, you know, we defer to the experience of those out there in the field. I think somebody who is qualified, a competent person, could under normal circumstances serve in both capacities. The key issue is what constitutes a competent person.

You know, it's very important that any of the procedures that are set up be reviewed by competent professionals and in the standard 1910.146 Appendix B, titled Procedures for Atmospheric Testing, Permit Required for Confined Spaces, OSHA specifically notes that development of entry procedures should be done by, or reviewed by, a technically qualified professional, e.g., OSHA consultation service or certified industrial hygienist registered as safety

engineer, certified safety professional or certified marine chemist, based on evaluation of all serious hazards.

And what we want to do is agree with that and make the point on the need for professionalism for those persons performing such duties. An attendant has to know what they're doing. An entry supervisor better have some substantial credentials behind them to ensure that they are able to monitor and guarantee the safety and health of those employees for whom they are responsible. Competency is really the key here.

And that really concludes our prepared statement such as it is. I'd be happy to answer any questions. And we look forward to working with OSHA on this important rule. And if we can be of any assistance, please let us know.

FACILITATOR McLAHAN: Thank you very much Adele. And I neglected to mention that we have Nilgun sitting here, who is giving the speakers little high signs of how much time is remaining. But she did an excellent job. You used the 15 minutes. Thank you very much.

Does anyone have any questions for Adele? Yes?

MS. : When you said mining regulation ---?

MS. ABRAMS: This is an OSHA rulemaking so it would not have any direct impact on the mining industry. But because surface mining and heavy construction or quite analogous in terms of the hazards, I would think that an OSHA

construction standard could be reviewed by MSHA and, perhaps, service a template for their rulemaking which, as Mr. Jeffress noted, has been on the back burner throughout the 1990s.

FACILITATOR McLAHAN: Okay. Excuse me, would you stand, please, and maybe use the mic so that our recorder can hear. Thank you.

MR. : Adele, you had mentioned that for an attendant or an entry supervisor ASSE felt that a certified safety professional, certified industrial hygienist, someone like that, should be required for that duty. Do you not feel someone who has gone through, let's say an OSHA training class on entry supervision, something like that, would not fill the same capacity?

FACILITATOR McLAHAN: Well, a certified safety professional, you know, has by through examination and training, received the credentials. What we referenced there was the Appendix B of the OSHA standard and that does, of course, provide for alternative methods of qualification, including OSHA consultation service.

I think a person who has had specialized courses in confined spaces through the OSHA training programs or analogous state programs, perhaps, somebody who holds an ASP certification rather than a CSP would be able to do it. The issue is competency. And the problem is that too often you have companies that will just select the most senior person on

their crew to be the attendant or to be the entry supervisor without having exposed them to any in-depth or specialized training on this issue.

Not every member of ASSE is a CSP or a safety engineer, even though the title is safety engineers. And we are not trying to exclude people from participating or being able to hold these positions. But what we are stressing is the need for competency for these people to be qualified so they can appreciate the hazards so that they know how to operate the equipment to do the monitoring that's necessary.

You know, too often when you have multiple fatalities occurring in confined spaces, it's because the very people who were supposed to be standing guard just dive right in there and they end up being asphyxiated or subject to the same hazard. And instead of having one fatality, you have multiple fatalities. And I would suggest if those people had had better qualifications up to, or including, a CSP, but at a minimum, some specialized training in confined spaces, we wouldn't be seeing these rescuers perishing at the rates that we are.

FACILITATOR McLAHAN: Okay. Yes?

MS. : So is OSHA offering certification programs? So that what you're requiring for these people to have?

MS. ABRAMS: Well, I'm not with OSHA and I'm sure

Lee would be able to speak more to that. I know, generally, there are classes in confined space offered by OSHA. I believe even ASSE may have some courses of that nature. The National Safety Council I know has materials. The American Industrial Hygiene Association has materials. I was at a meeting of their's earlier this year and the gentleman who wrote the textbook on confined space was the speaker. And I know he does training.

So there are available sources, both governmental and private sector where you can obtain confined space training. And if there's a new rule that comes out, I'm sure that will generate more training sources.

MS. : But my question was that yes, we, on our job sites, we require to have the contractor to have safety superintendent which has to be familiar and have to have certain training, but it's not the same as requiring for him as a competent person to have -- what I'm trying to see is if a type of certification in confined space? Or if I decide that he knows enough confined space is that good enough?

FACILITATOR McLAHAN: Lee, would you be able to answer her question?

MR. SMITH: Yes, we're interested in hearing from the construction community on precisely this type of question. If you feel that they should be specifically required to have some kind of a certificate, you know, we want to hear that and

why you feel that way. And if you feel that they should not have to have a particular certificate, you know, we'd like to know the reasons for that. We're hear today to hear what you all have to say and we're interested in your opinion and why you have it.

MS. : I'm with Washington Metro, the owner, and we hired a contractor. So whatever OSHA requires we put in our contract. And that's where I was coming, if that's what you're going to have to put in there, I will add into my contracts. That as a new requirement, because we go through the formal interview process of the contractor personnel. Specifically, as a safety superintendent. But I do not have that as a criteria for accept or rejecting him.

MS. ABRAMS: I guess one thing I would note, at the start of my comments, ASSE urged OSHA to consider adoption of the ANSI Z-117. And the definition of qualified person that appears in that consensus standard is a person, who by reason of training, education and experience is knowledgeable in the operation to be performed and is competent to judge the hazards involved and specify controls and/or protective measures. So as you can see, the ANSI standard does not limit qualified persons to those individuals who have earned the CSP or a PE degree.

If you have a combination of on-the-job experience, coupled with some specific training in this area, you as the

employer would have to make the judgement call as to whether that person is sufficiently knowledgeable in the operation and prepared and competent to judge the hazards and to carry-out those functions.

MS. : I'm sorry. In our experience, having the certification in some instances was not good enough. I had a lot of more knowledgeable people that did not went and got the CSP or ASP. And we felt they were more qualified.

FACILITATOR McLAHAN: In that instance, you know, my recommendation would be you go with the most qualified and knowledgeable person.

MS. : But my question was are we going to be limited or forced to go that way? That was the concern? To have somebody that have to have certification?

FACILITATOR McLAHAN: Well, I think the point that Mr. Connell made was that at this point, we are gathering information from the community. Decisions have not been made. So, we'd like to hear what your recommendation is, if you have one, or from the other people here and than the agency will have to make a determination.

MS. : The one point I could make would be that if you feel that this individual have to have specific type of confined space training, because everybody reads the regulation and, you know, understand them somewhat, and in go

in the field and from the experience of talking with the other, gain some more. But if it's strongly recommended than I would suppose that it be best served for everybody if those certification program could be in place so we make a requirement for an individual to go and obtain them.

FACILITATOR McLAHAN: Okay. Thank you. Are there any other questions or comments?

(No response)

Okay. All right, our next speaker is Tom Broderick of the Construction Safety Council. It came quick, huh?

MR. BRODERICK: Yes.

PRESENTATION

by Thomas Broderick

MR. BRODERICK: Well, I requested to speak last.

(Laughter)

I had no idea that would come quite so soon. I'm with an organization called the Construction Safety Council. And we work with predominantly union contractors and trade unions to try to make the workplace a little bit safer and a little bit healthier for the men and women that build the roads and bridges and buildings in this country.

I was also a construction worker for a long time and I, in doing that, created confined spaces. And I was an entrant into confined spaces. And then I got into safety and health and became the author of a number of programs for the

employers for whom I worked to address the hazards of confined spaces.

And it was difficult to really find a good boilerplate to create a confined space program for construction. And I think that that really speaks to the urgency that I feel for getting this standard out. There are not readily available good resources to help contractors put together a good quality confined space program.

Now, I look around the room and I see some of my colleagues that represent contractors who are members of trade associations. And those contractors are very lucky to have the level of expertise that they have available from their respective trade associations. However, a lot of the people that I represent are small mom and pop shops who do not have a safety professional on staff that are not members of trade associations. So the most common document that those people turn to are the 1926 construction standards. And bereft of a confined space standard, I think that a number of those small shops run into problems. Not to say that all the people who run into problems in confined spaces are small shops.

And I want to set an example of a confined space accident that happened in Chicago. November 9th of 1995. It's a fairly typical confined space scenario in construction. It involves not the general industry type of people crawling into tanks or process lines or systems, it involves an

excavation. And this happened at an aluminum processing plant. An excavation was 15 or 16 feet deep. The workers had been in and out of this excavation a number of times. It had been treated, initially, as a confined space with initial monitoring. And there had been a couple of other rechecks of the monitoring of this excavation. But at the stage of work where these folks were, there was an assumption because they had already put in some foundations and were building a wall out of this excavation that continued monitoring wasn't required.

Well, it rained and there was some water in the excavation so the workers were directed to get a pump, hook up the pump and dewater the excavation. And so they did that. They got a pump, they put it in the excavation and ran the line to a sewer where the water that was being pumped out was directed. And they in hooking up this pump needed to have a source of compressed air. So they went to the host employer and said, gee, guys, you know, we could bring a compressor on to the site, but we'll have to charge you for it. Do you have compressed air that we could use. And the host employer then directed them to a compressed air outlet that was a part of the permanent plant piping.

The pump is hooked up, the pump is operating, the workers go back to work. The OSHA investigation is not sure exactly how the first person went down. They speculate, and

the contractor speculated that the worker may have fallen from a rebar wire mesh structure that was being built. Anyway, the person ended up on the bottom of the excavation.

Another worker went to his help and soon that person was also lying in the bottom of the excavation. Right behind that person, a couple of others followed. And how often have we heard this scenario, you know, the well-meaning co-workers are trying to rescue their friend.

Well, not bad enough, the assistant fire chief for the plant fire rescue brigade shows up and he goes into the excavation and now he's down. Finally, the outside rescue people show up and fortunately the rescue squad is one that was trained, because they were in the jurisdiction of the deep tunnel in Chicago, and they had had lots of confined space and rescue training. And they immediately recognized what the problem was. You know, if you have one person down and it looks like the person fell, that's a -- you know, that's a scenario that would require more analysis. But when they saw the number of people that had succumbed, they recognized that there was an atmospheric problem. And so they donned their air packs and went in and performed the rescue.

Well, as it turned out, two of the workers were killed and the assistance plant fire brigade chief was killed. In doing the investigation, what happened in that excavation? they had been in and out of it, they had monitored it

initially, they had monitored it a few times. There just didn't appear to be anything that could screw up.

Well what, in fact, had happened is the pump, which was worked just fine, was being propelled not by compressed air but by argon. The host employer had directed them to hook up to a pipe that was not labeled, nor were any of the pipes in this facility. And it happened to be argon, a heavier than air inert gas. So they succumbed to asphyxiation.

I use this example because it points to a lot of things that were touched on earlier that need to be fixed and that need, in my estimation, to be fixed fairly quickly.

The need for continuous monitoring, I look at the cost of equipment to do it now. And when I look at other equipment that even small contractors are using to do their work, the cost of it, in my estimation, is not terribly prohibitive.

Continuous monitoring in this scenario would have saved lives. It would have indicated very quickly that the oxygen content had fallen below an acceptable level.

I guess another message, and I want to say loud and clear here, and this excavation incident helps me to that, is to presume that a host employer has a good effective confined space program to which we can marry an effective confined space program for contractors, I think, is taking us down a treacherous path.

In fact, I think there are many, many host employers out there who have a weak or, perhaps, a non-existent confined space program. And that could easily carry over to a lock-out/tag-out program which, of course, can effect entry into confined spaces as well.

So that in building this standard, I hope that we really do not presume that the host employer is going to have a lot of responsibility in protecting the construction workers who are going to be entering into confined spaces. Whether they're confined spaces that have been created by the contractor or whether in industrial construction they're confined spaces that were created by the host employer.

Having been a safety person, a field safety person, I have been in plants where I've been given misinformation, as in the example that I've used. In the example that I used, the contractor was directed to use argon rather than compressed air. An unfortunate mistake. But I have in the past been given bad information and have been very thankful that in my own procedures, I went back and retraced all of the steps that would provide a good level of protection for the people that I was charged with protecting.

I think that we, again, have to take a close look when we're building this standard to make sure that the host employers' responsibilities are not given too much weight.

The use of multiple attendants in a permit required

confined space standard, I have a great deal of concern with. As my co-presenter pointed out, it really does go to the issue of how many spaces and where are they. But I feel that if we have an attendant that is responsible for lives and multiple confined spaces, should there be a problem in one confined space, all of a sudden, all of that person's attention is directed to that space and the lives in that space and the other space or spaces that that person is responsible for become secondary. And I don't think that the persons in those other spaces deserve to be treated any less meticulously than those in the space where the problem is occurring.

You know, it might sound reasonable on paper that we can have a person that is near the entrance points to multiple confined spaces and may be in contact with those people, but if as they say it hits the fan and one of them all of a sudden, we're doing a number of things. That person who's responsible for them is summoning help is trying best he or she can to provide what assistance can be provided and to take the time to go to the others, or communicate with the other spaces, and wait to give attention to the space that has a problem, well, the others are safely evacuated and then begin to work on the problem, I think is unrealistic. So I think OSHA needs to take a hard look at the assignment of one attendant to multiple spaces.

To rescue. Too many contractors rely on municipal

rescue squads. I see it all the time. And we've done a good deal of training with municipal fire departments and the impression seems to be out there in the construction community that every fire rescue squad is trained to do, and equipped to do, confined space rescue, or tunnel rescue. And that certainly is not the case.

The scenario often times plays out where the employer writes into a program that the response will be from the local rescue squad, but the rescue squad is not even aware of the work that the contractor is doing, is not aware of the hazards specific to the sites where the contractor is. So in responding, may or may not come equipped and trained to do a proper rescue. And then we get into the scenario where you have well-meaning people, even though they are dressed in fireman suits, end up becoming victims as well.

So I think that we need to make sure that in the rescue provisions that if the local rescue squad or paramedic unit is to be designated as the rescue team, that the contractor is required to communicate with that entity and to make certain that that entity is aware of the hazards that they may be facing in responding to a confined space rescue at that site. I think in general it's just good practice at a construction site to keep the local fire department, the local rescue people aware of what's going on at the job site so that they can most effectively respond if a worker is in trouble.

The next point that I would like to address was touched on by my co-presenter, and that's the engulfment or work in sewers. Living in Chicago, I experienced an amazing thing a few years ago called the Great Chicago Flood. We had had the Great Chicago Fire and then we had the Great Chicago Flood. And I'm sure some of you heard about that. And, basically, a tunnel system exists under the City of Chicago that was built in the late 1800's, early 1900's to facilitate moving coal around below the city so that it could be delivered to the basements of all of those buildings in the area we called the Loop. The inter-city of Chicago, or the downtown Chicago.

And a contractor had, at some point, driven a pile into, or near, one of the parts of this tunnel system. And the concrete on the tunnel gave way and all of a sudden the Chicago River was sharing space with the tunnel system. And I remember waking up one morning and watching the news and the merchandise mart in Chicago was reporting that there were fish swimming around in its basement.

(Laughter)

And within a day or so, the entire downtown Chicago area was evacuated because all of the basements in the loop were under water.

Well, they called in the construction community to try to rectify this situation and now we had, you know, what

is a situation analogous to a sewer system that's flooded with water. So how do we repair it and pump it out? And I learned quite a bit about some of the technologies that are out there. I learned that using mattresses to plug the leak didn't work well. And, in fact, a number of the technologies that were used didn't work well. And, unfortunately, finally it was, however, taken care of. And there were no injuries in the repairing of the Great Chicago Flood.

But we did see some technologies that emerged that might be useful for OSHA to look at. And those involve inflatable, heavy duty rubber plugs that can be used to plug some fairly large diameter spaces that would provide a measure of safety for people in areas that could be isolated by them to do work.

And I'm not suggesting that every sewer job would require this, but I think that we might find that there are certain sewer jobs where there might be a higher likelihood of engulfment of water or sewage ending up in the same space where the workers are. So that's a technology that we should look at.

And I would be happy to assist OSHA, get in touch with the people who, in fact, were responsible for trying to fix the Great Chicago Flood, because I'm sure they have some wonderful anecdotal evidence of what works and what doesn't work.

Another point I would like to address is employee participation. I would hope that employees would have an active role in the development of permits, the observation of testing and other requirements similar to some of the things that we find in 1910.146 in the General Industry Confined Space Program.

We talked about small businesses. That's one of the concerns that we have. Of course, in developing any standard nowadays, I said before, many of the business that are out there working in the construction industry are small, they have no safety professional, and actually, the number of CSPs that work in the construction industry I think is relatively small.

I know that there are a number of CSPs that are colleagues that are in the construction division of both the National Safety Council and ASSE. A number of those people are actually interested in construction, but no necessarily working for contractors. They may be working for insurance companies that ensure contractors, insurance brokers and a number of other ancillary occupations, but no necessarily primarily responsible for employees of a particular construction company.

Having said that, the Board of Certified Safety Professionals has a couple of other designations that I see as being much more practical and applicable to the discussion at

hand. And those would be the CHST, I think it's the Construction Health and Safety Technician, and the STS, or the Safety Trained Supervisor. Those designations are much more achievable by the folks that would actually be out working directly with confined space work.

I think we need to help small businesses with every new OSHA standard or interim standard by creating materials that are very user friendly. I don't think there are many employers who would send an employee to a three-day or a four or five-day confined space course at the OSHA training institute.

I think that even the number of contractors on the large contractors side that would do that may be fairly small. So I think we need to be able to package critical information and procedures in a way that it can be delivered concisely. It should be delivered with a lot of printed material that can help the employer put together a confined space program.

I think we should have sample permits and anything else that we can create that would help the small employer to deal with the new standard. I don't think that we should weaken the standard though because small employers are concerned about the cost of compliance.

FACILITATOR McLAHAN: Mr. Broderick, excuse me.

MR. BRODERICK: Yes.

FACILITATOR McLAHAN: How much more time do you

think you need?

MR. BRODERICK: Maybe five minutes.

FACILITATOR McLAHAN: Okay. All right.

MR. BRODERICK: Moving right along, we need to clearly state the training requirements so that we understand the qualification for all participants in the process, especially with regard to doing the analysis of the space and doing the testing.

Another point, and a final point, is let's get on with this standard. It's been a long time in coming. I think that we're going to have a good amount of consensus from both the employer's side and the labor side in developing this standard.

I don't think it's going to be anywhere near as contentious as some of the other standards that we have seen, especially in recent history. And I know that speaking for my constituents, we will do whatever we can to assist the Agency get on with it. Thank you.

FACILITATOR McLAHAN: Thank you. Are there any questions or comments for Mr. Broderick?

(No response)

Okay. All right, we have our third speaker, Richard Hackney. Would you come up to the stage, please, Mr. Hackney. And Mr. Hackney is from the International Union of Painters and Allied Trades.

PRESENTATION

by Richard Hackney

MR. HACKNEY: Good morning. I'm kind of like that rabbit in Alice in Wonderland today, I'm late. Very simply, like I say, I got the word about this meeting about a week or so ago. When I got it my eyes come up real bright because this is a very sensitive and sincere subject. Particularly for the Painters International and the painters that we represent out there in the field.

We do have other crafts that do get exposed to confined space, but no where near as much as the painters do. For example, it says here examples of confined spaces that we encounter on the job site. We encounter probably as many confined space situations as any craft or individuals out there. Our members work in everything from tanks, to pipes, applying coatings, doing abrasive blasting, causing great hazards quickly to the gentleman or the people that are working in them. There are other things that I think that other than the regular so-called confined spaces, I think that sometimes are not really look at.

In 1989 when the Land Bank came about, they came out with containments that had to be designed for our men to work in. These containments were designed to keep pollutants from getting into the air, land and water. The only problem was is when they do that, many of those containments become what I

consider, and what many others would look at, as a confined space. That meets every definition of a confined space and the atmospheres in them can change just as dramatically and quickly as any tank or other type of vessel, which a man may be working. These containments, like I say,, are of real concern for the membership.

They are a real concern for me because, like I say, I personally have been out there and I can tell you that there's one way in and one way out most of the time. The lighting sometimes can be zero to none. Once a man starts blasting inside a containment with all this abrasive and spent debris that is being cut loose, it takes a matter of minutes and you can go from clear visibility to zero visibility.

This is kind of leading down to the next section, basically, where it's talking about continuous air monitoring and things. I'm going to try to get through this because, like I say, I know everybody here has got a lot to do and I really want to make sure these points are heard.

Very simply, when we go out there and we have men working in a containment or in any situation like that, the atmospheres can change so drastically and so quickly, depending upon the abrasive that's being used, to the pressure that's being used, to what is being removed. All these factors come into play and determine what happens with the atmosphere and how hazardous it can become and how quickly.

Not only can it be hazardous at that point, that's one of the reasons continuous monitoring, I feel and most of the members that I know would also feel, would be necessary. But when we turn around and then we start applying coatings, most of the coatings today are new. Some of them they say have been totally revised. And what happens is the vapors from many of these coatings become very explosive. You have a lot of static. Without grounding this equipment, you can have a lot of quick explosions.

I can tell you personally, I have lost two personal friends to confined space. One was an explosion and the other one was suffocation. And if continuous air monitoring had been taking place, these two incidents would not have happened. The first one had two 13-year-old kids. One was 13 and one was 14. And the other one had a boy in high school.

Now, to me that hits pretty serious business because these kids' lives have been changed forever. And whereas continuous air monitoring would have eliminated these hazards. Other things would have as well. But by having continuous air monitoring in these particular situations, where atmospheric conditions can drastically change from minute to minute, than these things have to be done. A person's life is worth more than that.

I've seen in here also it's talking about cost factors. Like I say, is it cost effective or does it save

labor. I'm not sure about how much labor it's going to save by having continuous air monitoring, but I'm going to tell you, it's going to save some lives. And to me that means more than any of the labor cost factors that we can figure up.

The other things, like I say, you have on here atmospheric conditions, which I was just basically talking about. We have so many various types of hazards that are in these different vessels we work in. You get into some of these containments and you may have vapors and gases that come from certain residues, lead paints, different type of coatings that are on there, asbestos.

And, like I say, most of the time, unfortunately, when we get into a job site, even though the jobs have been predetermined what is on the inside of a tank or on a bridge, once this work actually starts taking place, it's amazing how things change.

It's amazing how they find different hazards that were there that they didn't find. Different parts of a bridge may have different types of coatings. All these things occur. And then again, it goes back to what I was saying about the confined space with the containment, we're containing these things today and that is creating a lot of hazards.

Some of the other little things, like I say, if I had my glasses, I could probably read. But I left -- I was in a big hurry.

(Laughter)

But, I'm going to be in business now, you all might be in big trouble. There, we can see all kinds of words now.

Early warning systems, okay. Early warning systems, when it comes to engulfment, most of the time in plants we have a lot of individuals, particularly, back where I'm from -- and if you haven't figured out, that's not New York -- that's West Virginia. In that state, we have Carbide, DuPont, FMC. At one time, it was considered the chemical center of the world.

There are so many plants with situations where engulfment can be a very quick and serious problem. Most of our guys are good, particularly in those facilities. Getting things blanked out, locked out and tagged out. Like I say, I don't think that our craft particularly has had a lot of problem with that because of that particular situation I was just talking about. We watch it real close on that one.

Employers, most generally, in those facilities don't have a lot of option because of the plant facility itself have particular requirements that have to be met. And it's unfortunate the rest of the world doesn't do the same thing. And so if we can enforce this and making sure that if there was a chance of engulfment, that these things are blanks are put in, locked out, tagged out. Make sure that these things are in affect. I don't thing we'll have near the problem on

outside facilities as we do have in some situations.

All right and the other little things, attendance. Now this is another one I read and had to shake my head on this one folks when I read this one. You go talking about having a man monitor in more than one confined space at a time, you're asking for trouble. You're asking for trouble very quickly. Because it's like I told you, most of the situations that happen, they don't happen over a period of hours or even 10, 15 minutes. When it happens it happens now.

A man can be overcome by different types of vapors, different type of hazards so quick and it's not more than a minute or two. A man can be totally unconscious and be dead within a matter of minutes. There's no way that there should ever be a situation which we turn loose any kind of reg. that states that an attendant can watch more than one confined space at a time. Because I'm going to tell you, unfortunately, God bless them, the employers will do just that.

Instead of having two men watching two different confined spaces, they will use that one because it saves $5.00 or whatever. And, again, it goes right back to what I'm talking about. You're going to lose lives and it shouldn't happen that way.

But like I say, I think that's most of the little topics we had there. I could go on for a long time about this

subject, but I told the young lady I'd go 10 or 15 minutes and I figure I'll give you all a shot at asking questions if you want to for the last few.

FACILITATOR McLAHAN: Okay, are there any questions for Mr. Hackney?

(No response)

Okay, any questions for anyone else on the panel? Or our group of speakers?

(No response)

All right, let's open this up. And thank you very much. And you all are free to stay there if you're comfortable or you can go down into the audience, whichever you prefer. Let's open this up and see if there are anything that any of you out in the audience would like to add, particularly given attention to the issues that OSHA has raised. We have the poster here to kind of give you memory joggers of what our concerns are. Yes, yes sir?

MR. HERZOG: Hi, I'm John Herzog with Air Conditioning Contractors of America. And we kind of cross over from construction to maintenance to general industry. And so it's interesting, the work that goes involved and the construction, and putting in of air conditioning, which is heating as well as cooling units, it generally done in confined spaces, with the exception of heat pumps, which are on the exterior. Most of our people work in confined spaces

all the time. And this is really a challenge. And our safety programs, generally, are aimed at trying to make them aware of the difficulties that they're going to be running into and how to watch out for such things as heat prostration and heat exhaustion. Which is really the -- probably the primary concern that we would have in addition to working with various refrigerants.

The heat exhaustion situation is that you are generally in crawl spaces and, obviously, the summer for air conditioning units. Whether there's lighting or not is not really a factor. This is just generally servicing the equipment, but also when you're installing it which is part of the subcontracting aspect of construction, they have to work in these spaces where it could be during the summer and it's going to be very hot. So, best practices are things that we look at and try and share with them as much as possible.

Our members range from the very small mom and pop type operations to the very large commercial. We represent union and non-union contractors. We have approximately 9,000 around the country through 68 chapters. So that we have a good network. And my hope would be that OSHA wants the standard development -- would be working with us and others to help get the information out. What new practices, best practices, can be involved in making it a safer situation.

For example, for working in the heat area they have

air cool vests so that you put those on. We teach them about the signs to look for. Because, generally, they're working on their own. We don't have the ability to have somebody else coming in an monitoring them if it's in somebody's home or if it's a builder, maybe there are other construction workers around. But, generally, especially in servicing, the technician is on his own.

So you've got to recognize those conditions and, you know, drink obviously plenty of water, you know, to take breaks, but when it's 117 degrees like it is in Arizona, these guys working on rooftops or in crawl spaces, that's pretty hard work. That might be a reason why we have a shortage of workers in our industry.

The other thing that you should be aware of is that we do work with refrigerants. And some of these that could be vented in confined spaces are obviously hazardous. We work with ammonia as well as CFCs and HCFCs. And those vary as far as one of their hazards. We, obviously, encourage them to use breathing apparatuses in that case.

One of the things that -- I don't know if you can get involved with it, but you should be aware of it, EPA is once again declared that Houston does not meet their clean air quality standards. So the local state EPA and their equivalent of it is requiring some steps taken to try and bring them into compliance. One of which affects us.

Because they're talking about putting a catalyst on all air conditioning units. Well, this is going to drive the cost up considerably. This is for new as well as, eventually, they'll get to existing units. But the concern is that there is a slurry that you put on which is the catalyst on the coils. There's only one manufacturer. Nobody knows what the hazards of that slurry could be. It could be poisonous and yet they're mushing ahead with this.

And they had a hearing a couple weeks ago. And this is one of the worrys that we and others are trying to bring up that this is something that should be looked at. So maybe OSHA will say, yes, we better get involved with this and work with our fellow agency and make sure that they realize that they could be harming residents of those buildings, not just the construction people that are servicing or putting them in.

Now, other examples of confined spaces. We work in walk-in coolers and freezers. That's something that you should be aware of. And installing as well as servicing. Obviously, you see those a lot in grocery stores.

Generally, not an issue for multiple sites for us for spaces because we're generally just working on on servicing one or installing one. So that wouldn't be an issue.

I think that's about all I wanted to bring up. Oh, yes. One other thing that we're working which, again, is

perhaps best practices type of thing. Because the builders and the architects do not want to intrude upon living space, they usually put all the air handling units in out of the way spaces.

So this means that most of them are in the attics. One of the things that we're trying to work with especially in Florida with the building codes is to get them out of the attics so that they're in an area that is easier to get at and service. Which would not put people at as much hazard as they are now. So working with the building codes is another area that you may want to investigate.

FACILITATOR McLAHAN: Okay. Thank you Mr. Herzog. Is there anyone else in the group who would like to speak or has a question, comment?

(No response)

All right, let's walk through the issues and make sure that everyone has said everything that's on his or her mind.

We were looking for examples of confined space in construction. Can any of you think of any that may be unique or something that you want to make sure that OSHA remembers? Yes, sir?

MR. : Forms.

FACILITATOR McLAHAN: I beg your pardon?

MR. : Concrete forms.

FACILITATOR McLAHAN: Concrete forms. Okay. Are there any other confined spaces that we might not think of and that you think we need to be aware of? Yes.

MS. : Tunnels.

FACILITATOR McLAHAN: Excuse me, I can't hear you. Maybe if you stand.

MS. : Tunnels.

FACILITATOR McLAHAN: Tunnels, okay. Any others?

(No response)

Okay, let's move on to engulfment hazards. All of you received the description of our issues and know the questions that we asked. Just ask you to run those over in your mind and is there anything that you think we need to add to that?

(No response)

And just because we're walking through this doesn't mean we can't go back to something else. Because we're interested in gathering all the information that you have to share with us. So if you, as we move down the list, if you think of something that's back in number one, just raise your hand and we can add that.

Atmospheric hazards? Anything to add there? Yes.

MS. ABRAMS: I would just note that OSHA, perhaps, should talk to some of the folks over at MSHA, although they do not have a confined space standard, there have been some

improvements made in the area of continuous monitoring. For example, to monitor methane in underground coal mines and some of the gassy and metal and non-metal mines.

There have also been some improved technology put into use in terms of extended probes that can be as long as 40 feet and can keep the individual out of harms way while measuring for oxygen depletion or enrichment. And some of those technologies I would think would be easily transferrable to the construction industry.

FACILITATOR McLAHAN: Okay, thank you. Anything else in the area of atmospheric hazards?

(No response)

Okay, let's move on to the next one. How-to for small business. Is there anyone here that would like to add something that we should consider, special concerns of small business?

(No response)

All right. Yes, sir?

MR. CASTELL: I have --- through my experience -- speak in here?

FACILITATOR McLAHAN: Please.

MR. CASTELL: My name is Richard Castell and I'm a self-employed trainer. And I also do safety consulting on construction sites. Right now, I'm working at a remanufactured drinking water facility. Probably known as a

waste water treatment plant. And I noticed that a lot of small businesses get small contracts. And they have everything but a clue.

And they have almost no voice because most of the people that work there don't speak English. And so if OSHA's in the process of putting a standard together, it could at least make some of the extra material or training material bi-lingual. That would be an enormous help in plain language.

FACILITATOR McLAHAN: Okay. Thank you. Anything else to add in the area of small business concerns?

MR. HACKNEY: Well, I'd like to say one thing. And that's basically one of the biggest problems because we do have a large number of our employers that are classified as small employers. A large percentage of painting contractors generally work six or less employees. So what happens is most of your small employers you find out they have very limited or little or down to none when it comes to training of their workers, at all.

When the gentleman brung up that point back there, you've got the --- that you're of the hispanic situation, but you've also got to realize that most of these small employers don't do any training to start with. Because there are line items can't afford it because of the way they're bidding the work.

FACILITATOR McLAHAN: Okay, thank you. Yes, sir.

MR. : I represent the sheet metal and air conditioning contractors. We represent about 4,500 union contractors. And as Mr. Broderick stated earlier, members of our association have the ability to come to me and our various chapters to request information on new standards and things like that. However, there are thousands of contractors out there who are not represented by an association and their workers aren't represented by a union.

I would suggest that OSHA spend a lot of time in the development of their compliance materials and once this standard is complete, to assure that the small employers particularly have a good understanding of what's required by the standard and that they also do provide the information to their compliance assistance people. And get these people motivated and activated out there into the business community to help the employers to understand just exactly what they need to do and how to better protect their employees.

FACILITATOR McLAHAN: Okay. Thank you.

MR. POTTS: I'm David Potts, I'm the Safety Director of the National Electrical Contractors Association. I echo Tom's and other people's feelings that we need to move forward with this standard. It's a problem there that we've neglected since the development of the original standards. We need something in place for all to be able to identify with and utilize on the job sites.

In regards to training, we need to look at it from two perspectives. It's going to be the small contractor, or the contractor, that rarely moves into a compliance space environment. In that case, he needs all the information now because he may not have been aware in the specifications that he was going to move in this type of environment. It's going to be a high cost item and he needs to be able to address it as quickly as possible.

The other side is the affordability of training. For those people that do a lot of this type of work. And that may be the certification side of the coin. OSHA in developing their training materials need to look at both sides. That which the contractor needs initially in order to perform his work quickly, but to the standard. And then what system could be put in place where if an employee, especially in the union environment, or we have mentioned in the hispanic environment, which tends to be very transient too, can receive that training and take it elsewhere int heir career, performance of their career and their duties.

FACILITATOR McLAHAN: Okay, thank you. Any other questions or comments in the area of small business? Well, we're down to attended monitoring. Okay, let's move to attendant monitoring. Anything else? Yes, sir?

MR. : Day-to-day experience, I find that monitoring now at best is weak. And frequently people who are

the monitor really don't have a good sense of what's going on down below within the tanks in the tunnels. And to further dilute that by having them watch more than one would just -- I think we need to know how to do it right before we start trying to make is less. But we're not doing it right now on a day-to-day basis.

FACILITATOR McLAHAN: Okay. Thank you. Anyone else? Yes?

MR. BRODERICK: If we're running out of comments, I don't know about everyone else in here, but I would kind of like to see where OSHA is right now with the confined space standard. I know that there is an ACOSH, or there was an ACOSH, Confined Space Workgroup, that worked on a draft a couple of years ago. And I'm just wondering where the agency is in terms of promulgation of the standard?

MR. CONNELL: Right, ACOSH did, in fact, recommend a draft. They commented on. We were working pretty closely with ACOSH and we looked at their draft, they looked at revisions that we had made. There are actually several drafts that went back and forth. At this point, we, as Mr. Jeffress indicated earlier, we are scheduled to issue a proposed rule in July of 2001. Whatever we issue is going to have to be written in plain language or under that mandate and we take that very seriously.

We have looked closely at the general industry

standard when we were working with ACOSH. So the point of the process that we're in is, you know, we are trying to get a better feel at this point. Which is why we're having the stakeholder meetings, a better feel for the particular needs of the construction industry. So then in next year we'll publish a proposal. At that point, we will have hearings, public hearings, so there will be another opportunity for the public to comment.

And, of course, at that point, there will be a document, a specific document for the public to be focused on and give us particular comments on that. We will then analyze the public record and issue a final rule subsequent to that.

FACILITATOR McLAHAN: Okay. Any other questions, comments?

(No response)

Well, I think we're coming down to the end. When we have our coffee break, we'll break for sure. For good.

(Laughter)

Okay. Well, thank you all very much. OSHA is grateful for you, grateful to you, for taking the time to come out and share with us your interests and your concerns. And we really appreciate your attendance. Thank you.

(Whereupon, the meeting was adjourned at 9:50 a.m.)