

Certification Form

I certify that I have read the transcript for the September 19, 2007, meeting of the Panel, and that, to the best of my knowledge, this transcript is accurate and complete.



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Linda Zeiler, Designated Federal Officer



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Dr. Jan M. Mutmansky, Chair

# TRANSCRIPT OF PROCEEDINGS

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IN THE MATTER OF: )  
 )  
TECHNICAL STUDY PANEL ON THE )  
UTILIZATION OF BELT AIR AND THE )  
COMPOSITION AND FIRE RETARDANT )  
PROPERTIES OF BELT MATERIALS IN )  
UNDERGROUND COAL MINING )

Pages: 782 through 943  
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UNITED STATES DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

IN THE MATTER OF: )  
)  
TECHNICAL STUDY PANEL ON THE )  
UTILIZATION OF BELT AIR AND THE )  
COMPOSITION AND FIRE RETARDANT )  
PROPERTIES OF BELT MATERIALS IN )  
UNDERGROUND COAL MINING )

Conference Room 5  
Sheraton Reston  
11810 Sunrise Valley Drive  
Reston, Virginia

Wednesday,  
September 19, 2007

The parties met, pursuant to the notice, at  
9:04 a.m.

BEFORE: LINDA ZEILER  
Designated Federal Officer

PANEL MEMBERS:

DR. Jürgen F. BRUNE  
Dr. FELIPE CALIZAYA  
Mr. TOM MUCHO  
Dr. JAN M. MUTMANSKY  
Dr. JERRY C. TIEN  
Dr. JIM WEEKS



1 MALE VOICE: Twelve is the review of AMS.

2 DR. BRUNE: Yes.

3 DR. MUTMANSKY: All right. Is it  
4 appropriate to start with No. 2, or do we want to  
5 start with No. 4 first?

6 DR. BRUNE: Certainly. No, certainly No. 2  
7 is very much so appropriate.

8 DR. MUTMANSKY: Okay. The panel has the  
9 discussion information in your notebook, and so if you  
10 would utilize your notebook please, what we can do is  
11 we can quickly read through the discussion material  
12 associated with that recommendation and see if we have  
13 any suggestions to Jürgen or to the panel as a whole  
14 concerning what is necessary in that section and  
15 whether or not we feel as though we have a complete  
16 discussion section here, whether we need to add  
17 additional material.

18 Jürgen, that's not on the screen, so would  
19 you like to just sort of summarize it quickly for us,  
20 and then what we'll do is try to determine if that's a  
21 sufficient discussion section?

22 DR. BRUNE: Yes, fundamentally what we  
23 mentioned in the discussion, and this is a discussion  
24 that has been reviewed and edited by the members of  
25 the subcommittee that we recognize this is a result of

1 the Aracoma incident and the following investigation  
2 and the investigation report that certainly I would  
3 characterize them as belt conveyor maintenance and  
4 housekeeping items were not being attended to, and  
5 that's how we came about with the recommendations to  
6 strongly enforce existing standards.

7 I believe MSHA has the enforcement tools in  
8 the bag currently. I don't think there was any need  
9 to add any elements to the ability of MSHA to enforce  
10 better maintenance on belts, but it needs to be done,  
11 and it needs to be done both by the MSHA inspectors  
12 and also by the mine personnel and especially the fire  
13 bosses, who inspect the belt, on every shift wherever  
14 coal is loaded on the belt and prior to every shift  
15 and miners enter the mine.

16 This is essentially what is outlined in the  
17 recommendation and the discussion section, and frankly  
18 I think personally it's fairly complete in that it  
19 addresses the salient points of the inspection needs,  
20 and together with the former recommendation that we as  
21 the panel have agreed on, I think we're pretty much  
22 there, but I offer that to discussion.

23 DR. MUTMANSKY: Okay. Jürgen, I don't see  
24 anything that become obvious to me, but I'd like to  
25 just sort of kind of get a quick thought from the

1 panel members. Anybody? Tom?

2 MR. MUCHO: I agree with what Jürgen said.

3 I think we're pretty much there.

4 DR. MUTMANSKY: Jerry, are you okay with it,  
5 too?

6 DR. TIEN: Yes, it's pretty much in place.

7 DR. MUTMANSKY: Jim, do you have any  
8 thoughts?

9 DR. WEEKS: Yes. I think there's two things  
10 I would like to see in the discussion. One is there  
11 already, so I probably don't need to mention it.  
12 Maintenance is a critical issue, but that MSHA doesn't  
13 have any regulatory powers to deal with maintenance  
14 per se. We have to deal with it in some kind of other  
15 way that we recommended in the recommendations.

16 The second thing is, and I'll confess I'm  
17 obsessed with the problem of prevention, but I do  
18 think we need to state that improved maintenance is  
19 critical for fire prevention, or something like that  
20 or adequate maintenance.

21 DR. BRUNE: Yes. I think that's certainly  
22 something that can be --

23 DR. WEEKS: Yes. As I've said over the past  
24 couple of days, one of the problems with the rule is  
25 that it doesn't address the problem of fire

1 prevention, and we're trying to do that, and this is  
2 one of the ways of doing it. There are two other  
3 recommendations that deal with prevention also.

4 DR. MUTMANSKY: Felipe, do you have any  
5 comments?

6 DR. CALIZAYA: No.

7 DR. MUTMANSKY: Okay. I think, Jürgen, if  
8 you would take it upon yourself as your task to write  
9 a paragraph or a sentence or sentences that would  
10 appropriately address that issue, I think that would  
11 be very helpful, and we will all be reading these  
12 discussion sections so Jim will have an opportunity to  
13 interact with you if there's any necessity.

14 DR. WEEKS: Just before you get on the  
15 plane, make sure your battery on your laptop is  
16 adequately charged.

17 DR. BRUNE: I'll e-mail that around the next  
18 couple of days.

19 DR. MUTMANSKY: Sure.

20 DR. BRUNE: I'm pretty sure I'll have plenty  
21 of opportunity to work on that, and I don't think  
22 there's a problem with that. In fact, Jim, I value  
23 that as an important statement to be made that this is  
24 indeed something that addresses fire prevention rather  
25 than just firefighting or response after the fact.

1 DR. MUTMANSKY: Okay. Thank you, Jürgen, I  
2 appreciate that, and we will now begin to analyze your  
3 No. 4 recommendation, the BELT recommendation, and,  
4 Jürgen, you may want to just simply summarize that one  
5 and this is a short discussion section. Is that  
6 appropriate, Jürgen?

7 DR. BRUNE: Yes. That was basically saying  
8 that the BELT standard should not apply just to those  
9 mines that carry belt air to the face or use belt air  
10 at the face, but that it should apply to all mines,  
11 and I recall one of the discussion items that we had  
12 in the discussion on Monday that was that it would  
13 make it very complex for both enforcement and the  
14 maintenance folks in the mines if they had to deal  
15 with two different BELT specifications depending on  
16 which way the wind blows on the belt.

17 I think that's one element that I would like  
18 to add to the discussion section.

19 DR. MUTMANSKY: Okay.

20 DR. BRUNE: Again, respect to Jim, it's also  
21 a prevention item. It's probably an important element  
22 of preventing fires in the first place to install  
23 belts that do not propagate flames as they do in  
24 currently approved belts.

25 DR. MUTMANSKY: Okay. Thank you. Any other

1 thoughts from the panel members on that issue. This  
2 recommendation is of course a follow-up to the  
3 recommendations on belt flammability, and hence this  
4 is a reason there's a short discussion section. The  
5 major discussion will come in the BELT or the belt  
6 flammability recommendation, and we have a long  
7 discussion section in that section of our report.

8           Anybody have any additional thoughts about  
9 what should go into that discussion section? Jerry?  
10 Tom? Felipe?

11           DR. WEEKS: You're talking about this one  
12 here?

13           DR. MUTMANSKY: Yes.

14           DR. WEEKS: No.

15           DR. MUTMANSKY: No? Okay. Thank you,  
16 Jürgen, once again, and the next one is No. 12. Is  
17 that correct, Jürgen?

18           DR. BRUNE: Yes, that's No. 12.

19           DR. MUTMANSKY: This one is called review of  
20 AMS records. Would you go ahead with that one then,  
21 Jürgen?

22           DR. BRUNE: Yes. My contention and  
23 motivation to add this recommendation to the panel  
24 recommendations is that false alarms are an indication  
25 of potentially poor system installation, poor system

1 maintenance, poor function of system components, and  
2 they have the consequence that miners get complacent  
3 about alerts and alarms and may not properly react and  
4 respond to a real alarm.

5           I think it's just good practice for both the  
6 miner/operator and as well as the MSHA inspectors to  
7 review the AMS records that are typically presented  
8 and preserved in computer printouts to see how many  
9 false alarms there are. We as a committee  
10 specifically did not go to any specification as to how  
11 many false alarms would be characterized as excessive,  
12 but we will leave that to MSHA because they get the  
13 overview of being able to compare side by side several  
14 mines in similar settings.

15           If one mine has five or 10 times as many  
16 false alarms as another one, then I would think that  
17 is grounds for concern. Again, it's also an element  
18 of housekeeping and maintenance. The better the  
19 system works, the fewer false alarms. I would expect  
20 with appropriate tuning and perhaps adding components  
21 that are not as effective to false readings, ones that  
22 are masked by hydrogen or non-CO sensors. Things like  
23 that would add to the quality of information that  
24 comes from the AMS system.

25           DR. MUTMANSKY: Okay. Yes, Jerry? You have

1 a thought?

2 DR. TIEN: Certainly, I'll agree with that.

3 Just a question on the background information. We're  
4 talking about regular and periodic. What is the  
5 industry practice? What is regular? How regular is  
6 it? Once a year? Twice a year or upon request?

7 DR. MUTMANSKY: Jerry, are you asking the  
8 MSHA personnel that?

9 DR. TIEN: Yes, yes. Is it appropriate to  
10 do that? I'm just curious.

11 DR. BRUNE: That's perfectly defined in the  
12 law as a quarterly inspection.

13 DR. MUTMANSKY: I don't think there's any  
14 guidance on this.

15 MR. KALICH: Ask the question again.

16 DR. TIEN: Yes. The question has to do with  
17 the regular and periodic. I'm just curious about  
18 MSHA's practice now.

19 MR. KALICH: For review of records?

20 DR. TIEN: Right.

21 MR. KALICH: Once each quarter when the  
22 inspector goes to the mine, he'll review all the  
23 records, so including the AMS records would be done at  
24 least once each quarter, and of course if the  
25 inspector would request additional assistance, the

1 specialist would go to the mine would also review  
2 those records.

3 DR. TIEN: And the result, a turnaround of  
4 recommendations will be pretty quick?

5 MR. KALICH: Well, if you find any  
6 violations involved with the records, actually it  
7 would be cited and corrected immediately, that same  
8 day most likely, and if it would be a matter of maybe  
9 making some changes in a plan or if they might be  
10 items in the ventilation plan, that might take a  
11 little longer period, a few weeks maybe to get a  
12 change made in that respect.

13 DR. TIEN: I'm just wondering if the current  
14 practice or arrangement of frequency is adequate,  
15 good, or any thinking from the panel?

16 DR. MUTMANSKY: Well, I'd like to just  
17 simply say yes. Quarterly would certainly be  
18 appropriate. Any shorter period it would be  
19 statistically less meaningful, and so it would  
20 certainly make sense. Jürgen, do you have something  
21 to say?

22 DR. BRUNE: This recommendation also serves  
23 to alert the operator to the fact that MSHA will  
24 review the number of false alerts and that the  
25 operator has some explaining to do if too many false

1 alarms are registered in the system, and a lot of  
2 times the operator will be able to explain that. You  
3 know, if they change the sensor, if they found a bad  
4 sensor, they did something about it.

5           That's essentially what my goal and then I  
6 hope what the panel's goal with this recommendation  
7 is, is to alert both the operator and the enforcement  
8 authority to the fact that false alerts are an  
9 indication that there's something wrong with the  
10 system, and it needs to be fixed.

11           DR. MUTMANSKY: Jerry?

12           DR. TIEN: Yes. As a follow-up, are there  
13 any mechanisms in our current practice that should  
14 anything happen say when the MSHA inspectors leave  
15 today and something happens next week you don't wait  
16 until the next quarter to come back to react on that?

17           MR. KALICH: Well, that would depend on what  
18 type of incident may have happened. If it would be  
19 something that's reportable to MSHA, we would take  
20 immediate action. If it's items that aren't  
21 immediately reportable, we wouldn't necessarily know  
22 about them until the next inspection.

23           DR. TIEN: Are they classified as  
24 reportable? I mean, are they obligated to?

25           MR. KALICH: Well, the only items that are

1 reportable are the items in Part 50 for accidents that  
2 are immediately reportable to MSHA. A fire would be  
3 immediately reportable.

4 DR. TIEN: False alarms?

5 MR. KALICH: No.

6 DR. MUTMANSKY: Jerry, I think it's a  
7 logical question, and I think if we want to in our  
8 discussion group say it should be done quarterly or it  
9 should be done in some other fashion, it may be  
10 appropriate. I think quarterly is adequate in my  
11 opinion because a shorter period doesn't have much  
12 statistical meaning.

13 DR. TIEN: I agree.

14 DR. MUTMANSKY: It's a longer-term record  
15 that you have to look at.

16 DR. TIEN: Yes. I'm just more curious about  
17 this incident that just happened, and how do I address  
18 that?

19 MR. MUCHO: Yes. The thrust of this is to  
20 point the review of those records in a direction  
21 rather than saying yes, the records are here, they're  
22 being kept and moving on, take a look at that data  
23 with something particular in mind, which I think is  
24 false alarms in this case. That's the real thrust of  
25 what we're doing.

1 DR. WEEKS: Well, there's something else  
2 going on here that I think needs to be reflected in  
3 the discussion, and by way of analogy in the field of  
4 public health one of the most common activities is  
5 disease surveillance, and the purpose of disease  
6 surveillance is to identify trends and clusters. That  
7 is the rote purpose of surveillance. Stuff that you  
8 learn in Public Health 101 is to identify trends and  
9 clusters in the occurrence of disease so you can do  
10 something about it.

11 I think part of the purpose of looking at  
12 these records is not simply to identify that the  
13 people are doing their jobs or that there's a citable  
14 offense or something like that, but the purpose of it  
15 is to evaluate the system as a whole, to identify  
16 trends to what's going on in the mine. I mean, these  
17 systems generate an incredible amount of information,  
18 and it should be used to evaluate as I said the system  
19 as a whole.

20 I think it's an administrative database that  
21 provides a lot of information that helps you do your  
22 job better. It's not simply a recordkeeping mandate.  
23 It's a tool for managing the mine in a better way.  
24 That's a rather convoluted way of saying it. I think  
25 there should be some language to the effect that the

1 purpose of record review is to evaluate the whole  
2 system, identify trends.

3 Well, I wouldn't use the word clusters or  
4 trends, unusual events or something like that so that  
5 the mine operator and MSHA can persist in managing the  
6 mine in a more informed fashion and so on. Looking  
7 for citations is not efficient.

8 MR. MUCHO: I would echo what Jim is saying.  
9 That's what we're really trying to do. They'll look  
10 at it in a sense of false alarms, or what we're really  
11 saying look at the data, what is the data telling us.

12 DR. MUTMANSKY: I think that's very  
13 appropriate. I think the truth of the matter is if  
14 you look at a quarter's record, you don't know  
15 anything until you look at the previous quarter's and  
16 the previous quarter's may include a whole year's  
17 worth of quarters so that you can come to a  
18 conclusion. Each mine will have a certain base  
19 characteristic in terms of number of false alarms  
20 based upon the system and the mine.

21 Unless you really look at previous quarters,  
22 you don't know whether it's getting worse and whether  
23 or not there's a problem. It may be that it really is  
24 necessary to look at the previous say year of quarters  
25 to draw any conclusions. Can we state that I think in

1 the discussion? It would probably be appropriate.

2 MR. MUCHO: I guess something else, and I  
3 don't know whether we need to state it or whatever,  
4 but assuming as Mike said who might be doing that  
5 review could be the regular inspector. The inspector  
6 could be some specialist.

7 I would think that if this recommendation  
8 were taken by MSHA and enacted upon that at least  
9 initially it would probably be kind of a specialist  
10 person in order to gain that overall perspective as  
11 Jürgen talked about at a number of operations and so  
12 on, or at least a funneling of that information to an  
13 individual or individuals, who kind of have this on  
14 their plate, and assessing it.

15 In other words, if you had a lot of diverse  
16 people looking at it, I don't know what you'd end up  
17 with, but I just assumed that that's what MSHA would  
18 do if they would enact it, do something like that at  
19 least initially. Funnel all the information to Bill  
20 or whatever.

21 DR. MUTMANSKY: As it turns out, if MSHA  
22 ever has a computerized reporting system in place,  
23 that reporting system can be used to initialize the  
24 analysis of whether or not false alarms are increasing  
25 or not or whether there's an unusual occurrence of

1 false alarms of some sort. Computers are very good at  
2 that and may be better at that than a human being if  
3 you just want to pinpoint things to look at carefully.  
4 That might be worthwhile also saying in the discussion  
5 section of this recommendation. Any other thoughts?

6 MR. MUCHO: Yes. One other comment, and  
7 that is the recommendation right before this one, No.  
8 11, the Diesel Discrimination recommendation, diesel  
9 sensors. Where's the other one?

10 DR. BRUNE: That is the one, diesel  
11 discrimination. I think that's the one you mean.

12 DR. WEEKS: Somewhere along the way we got  
13 renumbered.

14 DR. MUTMANSKY: Yes, yes.

15 DR. BRUNE: That was later, yes.

16 MR. MUCHO: Yes, this one is really a subset  
17 of the one we just discussed and maybe just for  
18 clarity or neatness of the report and recommendations  
19 maybe you ought to take this one and put it in as a  
20 subset of that. In other words, it would follow in as  
21 you do this review at mines that use diesel, pay  
22 particular attention to diesel interference false  
23 alarms.

24 DR. WEEKS: Well, it may be in the  
25 discussion section, but I don't want to start messing

1 with the recommendations as they are now.

2 MR. MUCHO: Okay.

3 DR. MUTMANSKY: Yes, I think we probably  
4 prefer not to at this point in time, but you're  
5 absolutely right. Number 11 and 12 are very closely  
6 associated with each other, and the language in No.  
7 11, and the language in No. 12 have to be linked  
8 together very clearly.

9 DR. BRUNE: Yes. In fact, I'll add a cross-  
10 reference in No. 11 as well.

11 MR. MUCHO: Yes.

12 DR. MUTMANSKY: Jürgen, if you would do  
13 that, that would be a big help I'm certain.

14 DR. BRUNE: Yes.

15 DR. MUTMANSKY: Felipe, do you have any  
16 comments at all on this?

17 DR. CALIZAYA: Just a couple of comments.  
18 We talked about false alarms. We didn't say much  
19 about malfunction of the monitors, and I think we also  
20 need to stress that point, CO monitors or any other  
21 monitor that they are subject to malfunction, and  
22 again we need to see the frequency, how often this  
23 happens. The other thing we need to do, how many  
24 times we had fires and were not detected by those  
25 instruments?

1 DR. MUTMANSKY: The periodic calibration of  
2 CO sensors is done fairly often. Is that correct,  
3 Mike? Isn't that done fairly often?

4 MR. KALICH: Normally every 30 days.

5 DR. MUTMANSKY: Every 30 days, yes.

6 DR. BRUNE: And I think the indication was  
7 that, Felipe, a zero reading is normal, ambient CO is  
8 3 ppm, a zero reading is as bad as a 10 reading if  
9 they're not indicative of actual conditions, so you're  
10 exactly right. Even though a zero reading is not  
11 necessarily causing an alarm or an alert, it indicates  
12 malfunction of a sensor.

13 DR. MUTMANSKY: Do we have to address that  
14 in our discussion? I guess that's the next question.

15 DR. BRUNE: I think I will address it in the  
16 discussion, yes.

17 DR. MUTMANSKY: Yes. Okay.

18 DR. BRUNE: And I also wanted to address one  
19 extra point that hasn't been discussed. I would like  
20 to point out that additional complexity of the system,  
21 a large system has by nature more tendency for  
22 malfunctions and then false alarms than a system that  
23 comprises of three or five sensors. If you have 30 or  
24 50 sensors throughout the mine, obviously the  
25 occurrence and the chance for a false reading is much

1 higher than if you have a simple system in a single  
2 section mine.

3           That's also one comment that I would like to  
4 add to the discussion section.

5           DR. WEEKS: Yes, yes. The probability  
6 actually of a system malfunction increases  
7 exponentially with the size of the system.

8           DR. BRUNE: Yes.

9           DR. MUTMANSKY: Okay. Now, this also brings  
10 up the point it looks like we're closing in on all the  
11 discussion sections that Jürgen had written up  
12 initially. Now, we could also discuss this one,  
13 review of the diesel discriminating sensors. Who led  
14 the discussion on that one, Tom? Is there anything in  
15 the discussion section there that needs to be  
16 supplemented with additional information at this  
17 point? Since we're already discussing this, it's a  
18 good time to bring it up.

19           MR. MUCHO: Okay. Let me go back. I've got  
20 too many follow-ups here right now. I'll be right  
21 with you. Well, the discussion section on diesel  
22 discriminating as I mentioned earlier we start with as  
23 we're doing this review we want at mines that use  
24 diesel equipment. We want to especially note any  
25 false alarms due to diesel interference.

1           Just what Jürgen talked about, we're looking  
2 for MSHA to assess whether those are excessive going  
3 through the process that we talked about here, and in  
4 the event that it appears to be excessive, we would  
5 like to see MSHA have the capability of requiring the  
6 use of diesel discriminating sensors to address that  
7 issue rather than letting these false alarms occur and  
8 create a situation where a response might not be  
9 timely, so I don't see right off hand anything  
10 additional. I think that clarifies what we're after.

11           DR. MUTMANSKY: The issue is fairly clear.  
12 That's obvious.

13           MR. MUCHO: Yes.

14           DR. MUTMANSKY: And if we were to support  
15 this recommendation with a certain amount of logic in  
16 here. I think it's very clear to people what we're  
17 after. Any thoughts about the paragraphs in the  
18 discussion section on diesel discriminating sensors?

19           DR. WEEKS: Well, I haven't looked at the  
20 discussion, but I assume it says in there somewhere  
21 that CO from diesel exhaust is something like the most  
22 common cause of false alarms, and there's a way to  
23 deal with that problem. It seemed to me that the  
24 discussion should show that, that it's a common cause.

25           MR. MUCHO: I don't know that fact. Where

1 does that fact come from?

2 DR. WEEKS: I just said it. I think it's  
3 true. I don't know. It ain't nothing until I call  
4 it. That's what the umpire said.

5 MR. MUCHO: Yes, I was going to ask Bill  
6 some questions.

7 DR. MUTMANSKY: The reference in the  
8 discussion section is Francart's 2003 MSHA survey  
9 atmospheric monitoring systems in U.S. underground  
10 coal mines. It was an SME presentation in 2005, and I  
11 don't remember the specific nature of that. Bill, do  
12 you want to speak to that? You remember it  
13 intimately, don't you?

14 MR. FRANCCART: I'm sure I do. As far as I  
15 recall, this is basically a survey of the districts on  
16 how the systems were used and what they were used for.  
17 There was some information we obtained on false  
18 alarms, and of course not all mines use diesel  
19 equipment, so I don't know that it is the most common  
20 source of a false alarm. You have electrical  
21 interference, which is common in some mines, and also  
22 some hydrogen interference alarms, but diesel is right  
23 up there. There's no doubt.

24 DR. WEEKS: Well, whether it's common or  
25 not, we can say it's known, and we can do something

1 about it, and here's what you should do about it I  
2 think.

3 MR. MUCHO: I would like to ask Bill one  
4 other question. There's a motivation here. I'd like  
5 to see if it's accurate or not. I've been told or  
6 have the understanding that really there's only one  
7 mine that's using diesel discriminating sensors, and  
8 that being Twenty Mile. Is that a fact that  
9 that's --

10 MR. FRANCCART: No. There's a number of  
11 mines that use DDS.

12 MR. MUCHO: Do you have a feel for how many?

13 MR. FRANCCART: I don't have a number on the  
14 tip of my tongue this morning, no, but there are  
15 definitely more than one mine.

16 MR. MUCHO: Okay. Do you have a feel for  
17 approximate percentage of diesel mines that are using  
18 diesel discriminating sensors?

19 MR. FRANCCART: Not all dieselized mines use  
20 AMS systems.

21 MR. MUCHO: Right. But I'm saying at AMS  
22 system diesel mines, do you have a feel for the  
23 population that's using this diesel discriminating  
24 sensor as opposed to those that aren't?

25 MR. FRANCCART: It would be a guess, and I

1 don't know it's a very educated guess at this point,  
2 but we can get that information for you.

3 MR. MUCHO: All right. Thanks, Bill.

4 DR. MUTMANSKY: Okay. I would recommend,  
5 Tom, that why don't we just simply say that diesels  
6 can be a problem and are known to be a problem, and  
7 maybe we could leave it at that if we don't have a  
8 good statistic to quote.

9 DR. WEEKS: I'm not even sure the statistic  
10 is all that important. I mean, if it's a known cause  
11 and there's a good fix, you should use it.

12 MR. FRANCAERT: Yes.

13 DR. BRUNE: That's essentially what the  
14 discussion says already.

15 MR. MUCHO: So let's take a look at it.  
16 There's a problem out there that can be addressed, as  
17 Jim just said.

18 DR. MUTMANSKY: Okay. All right. The  
19 discussion section says, "During these reviews at  
20 mines that also use diesel equipment, MSHA should note  
21 the number of occurrences or false alarms due to  
22 diesel exhaust interaction." Now, of course if they  
23 know that, it would certainly be helpful information,  
24 and they could use this as a means of detecting which  
25 mines really do need to have diesel discriminating

1 sensors in place during their normal operation, so is  
2 that going to be sufficient, Jim?

3 MR. MUCHO: Yes.

4 DR. MUTMANSKY: Okay. Anything else in this  
5 number? This is No. 11. In this No. 11 discussion  
6 section, is there any other suggestions, Jerry?

7 DR. TIEN: Yes, more like a thought that  
8 just came to me. So far we have at least three or  
9 four recommendations. We have addressed the hardware.  
10 Should we also look into a list of comments on the  
11 maintenance personnel? Are they available? Have they  
12 been certified? Are they qualified? The quality of  
13 them?

14 MR. MUCHO: The maintenance people that  
15 maintain the system?

16 DR. TIEN: Who do this to take care of these  
17 folks? The hardware?

18 DR. BRUNE: I think specifically the number  
19 of false alarms and the overall function of the system  
20 is a reflection on the maintenance, and if the mine  
21 operator does not have the qualified maintenance  
22 personnel, typically the vendor that sells the AMS  
23 systems will also have some technical support  
24 available, so I don't think that is a huge concern.

25 Ultimately the criterion is does the system

1 function or not, and by calibrating, by releasing test  
2 gases around the sensor, you find out if the sensor  
3 works or not, and then you have to get proper  
4 maintenance to make it work. I think in this case  
5 it's outcome based. It wouldn't be enough if you had  
6 the best certified maintenance person on it if he or  
7 she can't put the system to work properly. Nothing is  
8 gained from that certification.

9           MR. MUCHO: I'd just add a little bit. One  
10 of the things you see historically at any mines once  
11 they start using AMS systems is their maintenance  
12 people, as Jürgen just pointed out, irrespective of  
13 how good of a maintenance person they are or what have  
14 you. They go through a learning curve getting  
15 familiar with the CO sensors, the calibration, the  
16 particulars of the system and so forth.

17           You see that from operations, do some kind  
18 of foolish things like not have the same people do the  
19 job and as a result, that learning curve gets extended  
20 until all the people that get involved go through this  
21 learning curve, but basically, I don't think there's  
22 anything that you can recommend. The maintenance  
23 people are capable. They know how to do this job.

24           There is going to be a learning curve for  
25 two operations, and again review of the records, as we

1 point out, if there are problems, as Jürgen was  
2 talking about, it should indicate that. I basically  
3 think you have a good point, but it's not going to be  
4 easy for us to do anything in the recommendations here  
5 to solve that problem any more than if you and I  
6 recommend we need more mining engineers, we're going  
7 to get more mining engineers.

8 DR. TIEN: Sure. Understood. Yes.

9 MR. MUCHO: It isn't that easy of a thing to  
10 recommend and expect results.

11 DR. TIEN: Yes. Yes, it is not a  
12 recommendation. I'm just curious should that be  
13 addressed in discussion section or something we should  
14 be mindful of?

15 DR. BRUNE: The panel makes the  
16 recommendation that clearly requires that the AMS  
17 system operator be qualified and certified so you have  
18 a person, who is certified, in charge of the system.  
19 Obviously, not every electrician that works on  
20 electrical equipment in the mine may have  
21 certification. As long as he works under the  
22 supervision of a certified electrician, there's a  
23 possibility of that working, too.

24 As long as there are people, who are  
25 certified and in responsible positions, I think that

1 takes care of it.

2 DR. MUTMANSKY: Okay. Any other comments on  
3 this? Tom?

4 MR. MUCHO: I thought Jerry was going to go  
5 to something and to just maybe to comment on for  
6 completeness of record. One of the things we talked  
7 about, especially when we had the presentations by the  
8 AMS manufacturers is the software portion of the  
9 system, and there are things there I don't think the  
10 panel ought to be making any recommendations on. I'm  
11 not even sure that a process through regulation is the  
12 way to handle it, but there's certainly room in the  
13 software to do certain things.

14 For example, we asked one AMS operator, who  
15 appeared to be very competent, what happens if two  
16 sensors in a row go on alarm, and the answer was send  
17 someone to investigate, which is the wrong answer, and  
18 where software within a system I think can be done  
19 through software just put out the correct answer, what  
20 to do in this situation when they alarm just like we  
21 talked about with point C with the reaction of two  
22 sensors.

23 You can have instructions on what's to be  
24 done pop right out up on the screen, but that gets  
25 variable and so on, and you're dealing with multiple

1 AMS manufacturers. I don't know how you handle that,  
2 but it certainly seems that there's some room in that  
3 area to do some things that could help out.

4 DR. MUTMANSKY: I agree. I agree, Tom.

5 DR. BRUNE: I just want to point out that  
6 the Australians have systems in place in at least two  
7 mines there that had systems that gave explicit  
8 instructions to the AMS operator as to what to do  
9 based on criteria that was sent by the mine operator  
10 specifically to the mine. They had four different  
11 levels of alert and alarm, and the system would  
12 indicate this is Level 3. Because of combined  
13 conditions, these sensors are in certain states, and  
14 this is what to do, so it's possible.

15 It's certainly an effort, and it has to be  
16 tailored and custom-made to every mine operation, but  
17 it's something that software nowadays can do. There's  
18 state of the art software available on the market.

19 DR. MUTMANSKY: Yes. I think there's a  
20 great deal of knowledge about these sorts of things  
21 already available, and I think we also can draw on  
22 knowledge from other industries such as chemical  
23 plants and nuclear plants. There's an awful lot that  
24 we can learn from them, and it would be best if that  
25 were done by the manufacturers to try to optimize

1 their software systems used in conjunction with the  
2 AMS system.

3           Any other comments, and in particular, are  
4 there any other comments about what we should insert  
5 in the discussion section?

6           DR. TIEN: I'm just curious, Mike, again,  
7 and MSHA folks. Are we pretty happy with the current  
8 manufacturers? Are they meeting the demands as  
9 requested or required by MSHA regulations? What are  
10 some of the areas you like to see happen if you had  
11 magic wands that you can wave it? Just wish list  
12 looking ahead?

13           MR. KALICH: I believe the manufacturers are  
14 responsive to the needs of the industry and meet the  
15 standards. Of course, there's always room for  
16 improvement, but I believe we're doing a good job, the  
17 manufacturers in the industry and MSHA and working  
18 together to meet these challenges.

19           DR. TIEN: Thanks.

20           DR. MUTMANSKY: Thank you, Mike. Any other  
21 questions or comments on this one at this point in  
22 time? Okay. I'm glad we're moving right along here.

23 It turns out that now we have covered all the  
24 discussion sections that Jürgen has authored, and that  
25 means that we're in very good shape. We'll go back

1 through the other discussion section starting with No.  
2 1 I guess, and we'll begin processing those as we move  
3 along.

4           Let's go back to the No. 1 recommendation,  
5 Lifeline recommendation, and begin our analysis of the  
6 discussion section here. In essence, the discussion  
7 section talks about the regulations published in the  
8 *Federal Register* last year and basically makes some  
9 additional suggestions regarding possible improvements  
10 in that lifeline system, and the first reference of  
11 value here is a NIOSH publication that was issued in  
12 2005.

13           In that publication, there was recognition  
14 that the lifeline tactile signals could be used for  
15 multiple purposes rather than just for a single  
16 purpose, and in this particular case, they were  
17 recommending directional indicators in front of  
18 impediments to travel so to speak, doors, regulators  
19 and so forth. Then that was expanded into other  
20 possibilities, possibilities for indication of doors  
21 and SCSRs.

22           Currently, the lifelines already are pretty  
23 well designed to allow the miners to locate the SCSR  
24 caches without difficulty, and there was discussions  
25 in here with the Cambria Association for the Blind,

1 who is the primary producer of these lifelines today,  
2 and in those discussions, we did learn that it would  
3 be easy to alter the current lifelines just by adding  
4 the tactile cones or other types of devices to the  
5 lines as add-ons.

6           You don't have to dismantle the lifelines to  
7 do that. It's perfectly possible to add them after  
8 the fact, and so the discussion involves some of the  
9 logic of trying to implement additional tactile  
10 signals on the lifelines. Is there anything missing  
11 in this discussion section? Are there any references  
12 that we could add to it?

13           MR. MUCHO: I have to express I guess it's  
14 nervous instinct more than anything terribly well-  
15 informed, but I think it would be useful to have in  
16 the discussion something about the number of signals.  
17 The greater the number, the greater the potential for  
18 confusion, and you consider that worst-case scenario  
19 you've got a limited amount of time, you're travelling  
20 in smoke, you may be wearing gloves. It's easy to  
21 mistake one for another and make some mistake on your  
22 way attempting to get out of the mine.

23           My instinct is that 3 is too big, but I  
24 mentioned that before, and I think it would be useful  
25 to have in the discussion that they should be clearly

1 distinguishable from one another, no more than three  
2 different signals. If I had my druthers, I'd have  
3 only two, directional and where the SCSR is, but you  
4 could load it up with all kinds of stuff. People  
5 aren't too interested in learning Braille. I don't  
6 mean to be sarcastic about this.

7           They're not interesting in learning Braille.  
8 They want to get out of the mine, so I just think we  
9 ought to limit the number and keep that sort of thing  
10 in mind. I don't know how to reduce that to a  
11 sentence or two, but that's my concern.

12           DR. MUTMANSKY: I can certainly put that in.  
13 I have no problem with that at all. Jerry?

14           DR. TIEN: Yes. You want the discussion. I  
15 can't remember when or who. Maybe you or Jim  
16 mentioned color and somebody might be color blind,  
17 might be something with the --

18           DR. WEEKS: Well, if you're in smoke, you  
19 can't see.

20           DR. TIEN: You can't see.

21           DR. MUTMANSKY: Actually, I believe in smoke  
22 it is fairly easy to see the reflective stickers.

23           DR. WEEKS: Right.

24           DR. MUTMANSKY: But still, your vision will  
25 be impaired, but your reflectors on the lifelines are

1 clearly an important design feature I would say.

2 DR. TIEN: We mentioned cones. I'll agree  
3 with you the three, more than that is too many. It  
4 can be very confusing. Does the different shape make  
5 any difference, or is it practical to even think about  
6 it other than cones? Tom, I'm curious.

7 MR. MUCHO: Well, I'll just pony on to that  
8 with what I was going to say. I think in both what  
9 you're saying and Jim has said, there's an issue  
10 there, and that the problem is coming up with these  
11 tactical methods, and I agree with Jim. If you don't  
12 come up with a method that facilitates that quite  
13 easily, you could complicate things and really go the  
14 opposite way, so the design of those tactical signals  
15 is to me a problem.

16 We don't say what they should be, and those  
17 are good reasons because it's a problem to come up  
18 with what's the right way, how that should be done.  
19 Cones have been traditional.

20 DR. MUTMANSKY: Yes.

21 MR. MUCHO: The thinking being as you're  
22 sliding your hand along the rope, if you hit the  
23 obstruction, well that's telling you you're going the  
24 wrong way. You slide up the pointed end, and that  
25 tells you you're going the right way, and that seems

1 to make a lot of sense. It doesn't seem to slow  
2 anybody down, et cetera, et cetera. But now find  
3 other tactile things that would do the things we're  
4 asking here, I just don't know what they are offhand.

5 DR. MUTMANSKY: We have left that open. We  
6 have said you have to do research to have a useful set  
7 of tactile signals. Jim's comment about maybe three  
8 is too many, we can change this recommendation this  
9 morning, but it has to be done before our friend,  
10 Jürgen leaves. I'm open to that, though I'm not  
11 suggesting it.

12 DR. WEEKS: Actually, the ones that are  
13 mentioned up there are three additional tactile  
14 signals. That doesn't say anything about direction,  
15 so if we recommend all of those, there are four  
16 different signals on the line.

17 DR. MUTMANSKY: Actually, two are coincident  
18 so to speak. If you use the cones as your tactile  
19 signals, then of course these three signals are also  
20 directional signals, but it's a good point, Jim.

21 DR. BRUNE: I think the recommendation  
22 doesn't say that we couldn't even use the same signal  
23 like a lot of mines are already doing that where they  
24 have two or three closely spaced cones indicating  
25 something is wrong or something is near that is of

1 importance.

2 DR. MUTMANSKY: That's correct.

3 DR. BRUNE: Like you said, on Monday, a lot  
4 of mines go towards branching off a mine that leads  
5 directly to the cache, so there are already methods in  
6 place. I think what the recommendation says and the  
7 way I read it as a panel member is that the lifelines  
8 should be used to indicate special circumstances such  
9 as doors and SCSR caches and impediments to travel  
10 where the escaping miners have to potentially make a  
11 decision or at least have to pay attention to what's  
12 going on.

13 Then we are recommending three different  
14 conditions be recognized. We're not saying they  
15 shouldn't all have the same signal. I think that  
16 could be well done and really if you indicate to a  
17 miner hey, there's something happening here, a lot of  
18 the miners will remember hey, that's the door we're  
19 looking for or that's the cache we're looking for.

20 DR. MUTMANSKY: Right.

21 DR. BRUNE: They're walking these escapeways  
22 at regular intervals, so at least perhaps not all in  
23 the crew, but some in the crew are likely to know  
24 what's happening here.

25 DR. MUTMANSKY: Okay. Any other comments

1 about this recommendation?

2 DR. CALIZAYA: Jan?

3 DR. MUTMANSKY: Yes, Felipe?

4 DR. CALIZAYA: I think when Jim mentioned  
5 about number of signals, he's talking about the  
6 frequency of those numbers. At least that's what I  
7 understood, frequency, how often. Not all the man  
8 doors are escapeway doors. You mentioned yesterday  
9 those are two by two, which is not suitable escapeway  
10 door. According to the regulations, we need to have  
11 some limited, so we are talking about specific doors  
12 that are located I don't know how often.

13 I'm sure it's in the order of six cross-cuts  
14 or maybe more than that, so we are talking about two  
15 specific doors, and those signals are for those doors?

16 DR. BRUNE: Yes. The idea in my opinion is  
17 that the doors that are typically in coal mines you  
18 have depending on cross-cut spacing, you have it every  
19 two or every three cross-cuts. At most, you have a  
20 door to get into a different entry, and if the crew  
21 has to because they encounter heavy smoke, or they  
22 encounter a roof fall that impedes travel, then they  
23 would have to go even to a 30-by-30-inch door.

24 That's not considered an escapeway door  
25 that's in the escapeway itself, but nevertheless, the

1 crew has to know where these doors are, and they need  
2 to be able to find them in thick smoke.

3 DR. MUTMANSKY: Jerry?

4 DR. TIEN: Yes, I agree with you. By the  
5 time you try to get out, you find the first door to  
6 get out.

7 DR. MUTMANSKY: Right.

8 DR. TIEN: You do not look for that  
9 particular four by four door, so I'm not sure you want  
10 to specify the escape door.

11 MR. MUCHO: No, we definitely don't. You  
12 want to utilize any door that you can get out of if  
13 that's a good door to get out of.

14 DR. MUTMANSKY: If you're escaping from a  
15 house fire, you don't look for a specific window. Any  
16 window will do at that point.

17 MR. MUCHO: Right. Right.

18 DR. MUTMANSKY: I don't want to end this  
19 discussion because I think Jim brought up a very good  
20 point. The question is are we still comfortable with  
21 this recommendation? Jim, are you still comfortable  
22 with that?

23 DR. WEEKS: Well, I'm mostly comfortable. I  
24 think that it's important to address the topic, and  
25 that's another issue, which I'll comment on in a

1 minute, but yes I'm comfortable.

2 DR. MUTMANSKY: Okay.

3 DR. TIEN: Another thing, it is over there,  
4 but it's not being emphasized enough is the word  
5 "standardization." I think that's very important.  
6 This should be reflected somewhat. It's standardized.

7 DR. BRUNE: Well, it says that.

8 DR. MUTMANSKY: It says that.

9 DR. TIEN: Yes, but it's very, very  
10 important.

11 DR. MUTMANSKY: Yes.

12 MR. MUCHO: The other issue is that if you  
13 just looked at this recommendation by itself, the  
14 concept of using the belt entry for ventilation simply  
15 wouldn't occur to you because the words are not there.  
16 The concept is not there, et cetera, so I think in  
17 discussion we need to address the question why is the  
18 committee on belt air addressing the question of  
19 lifelines.

20 It's because the use of belt air has an  
21 effect upon the number and the quality of escapeways,  
22 and that's something that again to note another  
23 problem with the rule is it doesn't address the issue  
24 of the number or quality of escapeways, and it's an  
25 important topic.

1 DR. MUTMANSKY: Yes. I recognize some  
2 problems in trying to put this recommendation through,  
3 and one of the things I said in the paragraphs was  
4 these signals should be researched for practicality  
5 and easy detection by both gloved and ungloved miners  
6 before they are implemented.

7 I was concerned in particular about the fact  
8 that many of the miners would be gloved, or half of  
9 the miners might be gloved, and the other half might  
10 be ungloved, and when you're moving along a lifeline  
11 of this sort, each of those people would have somewhat  
12 different ability to feel the tactile signals, and I  
13 realize we might be recommending something that might  
14 be better addressed in a different manner. Jerry?

15 DR. TIEN: Yes, I have somewhat not exactly  
16 along the lines but a question addressed to you and  
17 Linda, the way the 20, it used to be 21, 20  
18 recommendations were sequences for good reasons. Now  
19 would that be the final format it's going to turn out  
20 in the report, or are you going to prioritize which is  
21 more important?

22 MS. ZEILER: It doesn't need to be in this  
23 order. It can be in whatever order the chairman  
24 decides in consultation with you guys.

25 DR. TIEN: So to reflect the importance? Do

1 you see what I'm talking about?

2 DR. WEEKS: Would you not put this in No. 1?

3 DR. TIEN: I don't know. I suppose I ask a  
4 question. I just used that. Should we resequence in  
5 the way we --

6 DR. MUTMANSKY: I would do whatever the  
7 panel recommends. If the panel recommends that we  
8 resequence them in some other order, and if they give  
9 me some basic idea of how they feel they should be  
10 ordered, I will try to order them, and we'll get back  
11 in touch with you. Actually, with some discussions  
12 with me, Linda set the order, and I thought that that  
13 order of sequence as we addressed these  
14 recommendations worked out quite well.

15 We may wish to have a different order, a  
16 presentation in the final report, and I'm open to  
17 suggestion from the panel.

18 MR. MUCHO: I think it should be reordered.  
19 I thought it was going to be. I think we ought to  
20 section off by belt air issue and the belt  
21 flammability issue and some rough prioritization  
22 there. Obviously, belt flammability ought to lead  
23 with the BELT recommendation then followed by the  
24 other test, the drum friction and so forth. The same  
25 for belt air.

1 DR. MUTMANSKY: I think it would be  
2 appropriate, Tom, and all we would have to decide is  
3 the actual order of those. Do we wish to attack that  
4 problem right now, or do you want to let it go until  
5 this afternoon?

6 MR. MUCHO: Are we going to do it today?

7 DR. MUTMANSKY: You will not leave here  
8 until you do it, Tom.

9 MR. MUCHO: I'm going to give it to you  
10 then. This is my recommendation.

11 DR. TIEN: Well, probably we should consult  
12 with Jürgen I guess before he leaves, at least how he  
13 feels.

14 DR. MUTMANSKY: Yes, we should. We should  
15 consult with Jürgen.

16 DR. BRUNE: I personally agree with the  
17 prioritization. I think that makes sense even though  
18 on the other hand the way laws are written, it's  
19 typically not right. If you look at 75, the  
20 regulations on the 30 CFR Part 75, is ventilation of  
21 higher priority than roof support or vice versa?

22 I think if these recommendations ultimately  
23 are recognized as recommendations by the panel, then  
24 each of them should have a certain amount of weight  
25 and certainly should be looked at by MSHA and by other

1 regulatory bodies.

2 DR. MUTMANSKY: Right.

3 DR. BRUNE: I think however with assigning a  
4 priority, we can express our feeling as a panel as to  
5 what is the most important of our recommendations  
6 versus some that are perhaps of less weight.

7 DR. MUTMANSKY: Yes. Tom, do you have an  
8 order already written up?

9 MR. MUCHO: Well, I do for the belt  
10 flammability issue. Three, 5, 6, 4. No.

11 DR. WEEKS: What is this about?

12 MR. MUCHO: Three is belt flammability we  
13 called it. I don't know what we're calling it these  
14 days. That's the BELT test. Five is other belt test.  
15 That would be two. Then belt flammability to all  
16 mines would be 3, and then coordinating BELT test with  
17 other countries, No. 6, would be No. 4.

18 DR. WEEKS: What's No. 3? I'm sorry.

19 MR. MUCHO: Number 3 is the belt  
20 flammability applying to all mines.

21 DR. MUTMANSKY: Give me the numbers again  
22 there, Tom.

23 MR. MUCHO: Okay. Three, 5, 4, 6.

24 DR. MUTMANSKY: Three, 5, 4, 6?

25 MR. MUCHO: Three 5, 4, 6. That was a quick

1 review. I think I got all the belt flammability ones  
2 there are.

3 DR. MUTMANSKY: And where do you want belt  
4 maintenance to go?

5 MR. MUCHO: Sorry. I did miss that one.  
6 Well, belt maintenance, I've looked at that, and  
7 that's really I think tied into the belt issue. To me  
8 the issue of fires in general applies to the belt air  
9 issue. You can put it over in the belt flammability  
10 issue, but that's why I left it out of that.

11 DR. MUTMANSKY: Okay. Should these be the  
12 first four that we take in our list? That's the next  
13 question.

14 DR. TIEN: Should we look at how we're going  
15 to cluster them, use the words?

16 DR. MUTMANSKY: Sure. Other clusters, yes.

17 DR. TIEN: Yes.

18 DR. MUTMANSKY: Yes, I think so, Jerry.

19 DR. TIEN: Other groups.

20 DR. MUTMANSKY: Do you have other  
21 recommendations as to clusters?

22 DR. TIEN: The belt petition we used on the  
23 yes or no and the different process will be a natural  
24 family.

25 DR. MUTMANSKY: Yes. Yes, I agree.

1 DR. TIEN: It used to be 7 and 8. I don't  
2 know what it's --

3 DR. MUTMANSKY: Seven and 8?

4 MR. MUCHO: It shouldn't have changed.

5 DR. MUTMANSKY: Here we go. Thank you,  
6 Bill. Belt air approval No. 8. Now, go beyond No. 8  
7 there, Bill, if you can 9. Go back one more, Bill.

8 DR. BRUNE: Jan, while you are working on  
9 this, I think I need to get ready to leave, so I would  
10 like to thank you as the chairman and my fellow panel  
11 members for their cooperation, their support. I would  
12 also like to thank the MSHA support staff for their  
13 hard work in reviewing our recommendations and  
14 preparing this, and finally I would like to assign a  
15 proxy vote to Dr. Tom Mucho in case there's any  
16 additional voting that needs to happen here, so thanks  
17 all of you.

18 It was an enjoyable experience, and I hope  
19 we are doing something that benefits the safety of the  
20 miners.

21 DR. MUTMANSKY: Jürgen, those are very nice  
22 words, and on behalf of the other members of the  
23 panel, we thank you for your service to this panel,  
24 and we wish you well on your trip to China.

25 DR. BRUNE: Thank you.

1 DR. TIEN: Jan, Mr. Chairman, I'm just  
2 wondering, will it be okay to take a nice break so we  
3 can sit down and look at those one off hour?

4 DR. MUTMANSKY: And work over our break?

5 DR. TIEN: And work on this when we come  
6 back, yes.

7 MR. MUCHO: I think somebody ought to do  
8 some straw men and facilitate the efficiency here.

9 DR. MUTMANSKY: Why don't we do this. Why  
10 don't we take up this topic right after lunch. In the  
11 meantime, I will attempt to work with any of you, who  
12 want to, to try to put that in order.

13 DR. TIEN: I'll be very glad to work with  
14 you.

15 DR. MUTMANSKY: Do you want to work with me  
16 on that, Jerry?

17 DR. TIEN: Yes.

18 DR. MUTMANSKY: Jerry, you and I can attempt  
19 to put together an order.

20 DR. TIEN: Yes.

21 DR. MUTMANSKY: After lunch we will consider  
22 that order, and everybody will be able to weigh in at  
23 that time on that, yes.

24 DR. TIEN: Okay.

25 DR. MUTMANSKY: Okay. Perhaps as we break

1 for our lunch break, we can spend five minutes or 10  
2 minutes if necessary to try to do some ordering,  
3 Jerry, and if you and I can bring a proposal back to  
4 the group, that might save a lot of time rather than  
5 doing it here in session.

6 DR. WEEKS: Yes, I think the clustering that  
7 Tom proposed I think makes good sense, and I think we  
8 should just adopt it.

9 DR. MUTMANSKY: Sure. I agree. I agree  
10 with that, too.

11 DR. WEEKS: Does that make sense?

12 DR. MUTMANSKY: We'll try to put the others  
13 in clusters, and then the more unclustered ones we can  
14 try to figure out how they fit in the overall pattern.  
15 Okay. Thanks for that suggestion, Jerry. Okay.

16 Next let us return to the general discussions. We  
17 have already discussion No. 1 and No. 2. I think what  
18 we need to address next is No. 3, Conveyor Belt  
19 Flammability Testing and Approval.

20 If you will turn in your notebooks to that  
21 section, we need to have your input as to whether or  
22 not we need any additions to the discussion section  
23 for No. 3, Conveyor Belt Flammability Testing and  
24 Approval. Okay. Who wrote this up originally, Tom?  
25 I've forgotten.

1           MR. MUCHO: This is one of all three  
2 subcommittees.

3           DR. MUTMANSKY: That's right. Okay. Jim,  
4 you pulled together much of the good material.

5           DR. WEEKS: I started it.

6           MR. MUCHO: Jim presented it here.

7           DR. WEEKS: In a nutshell, basically it's  
8 historical review of the evolution of testing and  
9 approval of belts for flammability and ended up  
10 concluding that we should support the BELT test.  
11 There have been a number of comments on it, which I  
12 haven't yet incorporated but will, and there was some  
13 discussion yesterday or the day before about toxic  
14 materials and smoke.

15           I looked at the paper by Henry Verakis and  
16 wrote a couple of paragraphs to put in there on toxic  
17 materials. I can read them or display them, or how do  
18 you want to do this.

19           DR. MUTMANSKY: Yes, okay. That was Harry.

20           DR. WEEKS: Harry. Sorry.

21           DR. MUTMANSKY: Yes, I would like to, Jim.  
22 I would like to review those, and you have just two  
23 paragraphs?

24           DR. WEEKS: Yes, yes.

25           DR. MUTMANSKY: I think we can probably just

1 read through those and analyze them quickly.

2 DR. WEEKS: And this is a draft. I may have  
3 some distortions. Are you going to plug me in?

4 DR. MUTMANSKY: Sure.

5 DR. WEEKS: Why not? I'm not sure I can  
6 take that plug. Well, let's give it a try.

7 DR. MUTMANSKY: Yes, it's a different plug.

8 DR. WEEKS: No, I think it will go. How do  
9 I get it up on the screen?

10 DR. MUTMANSKY: How about if we take a 10-  
11 minute break while Jim gets his computer hooked up to  
12 the system.

13 (Whereupon, a short recess was taken.)

14 DR. MUTMANSKY: Okay. We'd like to go back  
15 into session again, and we would like to take up where  
16 we left off. Jim's paragraphs concerning toxic  
17 materials are now on the computer, and we can take a  
18 look at them. Jim, would you like to go ahead with  
19 the discussion?

20 DR. WEEKS: Sure. First of all, keep in  
21 mind this is a draft, and there is some incomplete  
22 sentences. There's some errors and so on, and part of  
23 what I like to do is fix all of those problems, but  
24 basically this is building off of the paper that  
25 Verakis prepared for us, and it was quite similar to

1 the presentation that we had in Pittsburgh. Let me  
2 just read it over starting at "Belt fires produce a  
3 variety of toxic materials including carbon monoxide,  
4 hydrochloric acid, sulfur dioxide and others."

5 I'm actually not sure about the sulfur  
6 dioxide. I think it's true, but I don't know.  
7 "Except for CO, these toxic materials are irritants to  
8 eyes and the respiratory tract. They also pose a  
9 significant vision hazard. While the production of  
10 toxic materials has been evaluated by the Bureau of  
11 Mines and then by NIOSH, neither agency has  
12 recommended that belts be subject to a regulatory  
13 limit on either the composition or concentration of  
14 toxic materials.

15 "Instead, the NIOSH approach includes three  
16 features: 1) is use of a Toxicity Index or TI, 2) was  
17 measuring the TI while conducting the BELT test by  
18 looking at the two of them together, and 3) concluding  
19 the most effective way to prevent the dispersion of  
20 toxic combustion materials is to prevent combustion.  
21 In brief, if you don't want smoke, don't have a fire."

22 Now I try and discuss these in very brief  
23 fashion. "The TI is designed to reduce information  
24 about the concentration of all toxic materials to a  
25 single measure for the purpose of evaluating toxic

1 materials from the belts." I say it's a weighted  
2 average of the principal ingredients from smoke from a  
3 belt fire. Is that accurate? Fair? I mean, I  
4 actually don't know exactly how they --

5 MR. VERAKIS: Basically, that's accurate,  
6 yes.

7 DR. WEEKS: Okay. It's close enough?  
8 Great. "Measuring the TI while conducting the BELT  
9 test demonstrated that there was no difference in the  
10 TI between belts that passed versus those that did not  
11 pass the BELT test. Those that passed the BELT test  
12 however had, in general, less and slower flame  
13 propagation, and as a consequence, they produced less  
14 smoke. It follows then that if a belt passes the BELT  
15 test, it poses less of a risk of toxic effects than if  
16 it did not pass the BELT test."

17 So it's a sort of indirect benefit of  
18 passing the BELT test. Would you say that's a fair  
19 summary of circumstances?

20 MR. VERAKIS: Yes, I'd say that.

21 DR. WEEKS: We can have smoke without a  
22 fire, so that's totally unaddressed either by me or by  
23 NIOSH, but this was simply an attempt to discuss the  
24 issue. NIOSH's logic, I think it's very  
25 straightforward logic. I don't have any quibble with

1 it. I'm concerned about the smoke without the fire  
2 problem, and I suggest inserting these two paragraphs  
3 somewhere in the discussion referencing Verakis'  
4 paper.

5 MR. MUCHO: One comment, Jim. The smoke  
6 without a fire is one of the rationale for proposing  
7 the smoke sensors issue so that we get a warning when  
8 we have smoke without a fire, i.e. smoke with little  
9 CO, so that was part of the background of the smoke  
10 sensor recommendation.

11 DR. WEEKS: Do you want to add a sentence  
12 down here at the bottom then? I'd hate to just leave  
13 it out there and saying here's a problem we don't have  
14 anything to say about.

15 MR. MUCHO: Yes, do like Jürgen recommended  
16 or said he was going to do with one of his, just  
17 cross-reference the smoke sensor information.

18 DR. WEEKS: Well, actually just say this is  
19 one rationale for proposing smoke sensors in addition  
20 to CO monitors and just add that sentence in there.

21 MR. MUCHO: Yes.

22 DR. WEEKS: You can't do that?

23 MR. FRANCAERT: It will be encrypted.

24 DR. WEEKS: Oh. There's a technological  
25 limitation for putting it on the screen.

1 MR. FRANCCART: Oh, it will go on the screen,  
2 but the problem is when you save it.

3 DR. WEEKS: Okay. All right. I can just  
4 add it when we're done. I mean, it's a pretty  
5 straightforward sentence.

6 MR. MUCHO: Yes. Right.

7 DR. WEEKS: All right.

8 DR. MUTMANSKY: Jim, anything else you want  
9 to say about that now?

10 DR. WEEKS: I just want to make sure it's  
11 reasonably accurate, fair, what we want to say, et  
12 cetera.

13 DR. MUTMANSKY: Okay. I have no problem  
14 with that. Jerry or Tom, do you have any comments?

15 MR. MUCHO: No. I think that does a good  
16 job of addressing something that it didn't have in it.  
17 We needed to address that.

18 DR. MUTMANSKY: All right. Good. Thank  
19 you, and, Felipe, are you okay with that?

20 DR. CALIZAYA: Yes.

21 DR. MUTMANSKY: All right. Okay. Jim, I  
22 would guess then that we have approved your general  
23 paragraphs here, and if there are any additional  
24 changes that you make, I think as long as you don't  
25 change the meaning or anything, we're perfectly okay

1 with that.

2 DR. WEEKS: No. It's just the issue that  
3 Tom and I would discussing about the rationale for  
4 smoke sensors.

5 DR. MUTMANSKY: Yes. Okay. Good. All  
6 right. Good. Are there any other additions for  
7 clarifications to the discussion material for this  
8 particular one? It's appropriate now for the panel to  
9 take that up. Are there any other additions to the  
10 belt flammability discussion sections that are  
11 necessary at this point in time? Okay. Thank you.  
12 We will then move on to the BELT recommendation, and  
13 is that one No. 4?

14 MR. MUCHO: Five.

15 DR. MUTMANSKY: Number 5. That's other belt  
16 tests.

17 MALE VOICE: Isn't this what we were just  
18 doing?

19 MS. ZEILER: We just did 3, the next one is  
20 4.

21 DR. MUTMANSKY: Number 4.

22 MALE VOICE: We're going on to four now?

23 DR. MUTMANSKY: Yes.

24 MR. MUCHO: We already did 4. We want to do  
25 5. We've already done 4, which is also Jim.

1 DR. MUTMANSKY: You're right. You're  
2 absolutely right. We want to do No. 5 now, other belt  
3 tests, and in this particular situation, we're  
4 primarily discussing a drum friction test. Who is  
5 leading discussion on this one?

6 DR. WEEKS: I guess I am.

7 DR. MUTMANSKY: Okay.

8 DR. WEEKS: Here again, the discussion  
9 recapitulates what we discussed on I guess it was  
10 Monday, which is that friction or ignition is a  
11 frequent source of belt fires. Second of all, it  
12 addresses the problem of igniting a fire whereas the  
13 BELT test addresses the question of flame propagation  
14 and spread, so it addresses the different phenomena.

15 Not that there isn't overlap, but that's a  
16 different phenomena and that drum friction tests are  
17 employed just about everywhere else in the world on  
18 evaluating belts. What we should do here is adopt a  
19 drum friction test also. Now, the principal problem  
20 with recommending that is there is no such thing as a  
21 drum friction test.

22 There is a variety of drum friction tests,  
23 different parameters, different objectives and so on,  
24 and the empirical basis for doing that here, that is  
25 the experiments have not been conducted and the test

1 developed by NIOSH in the U.S., so what we recommended  
2 is we adopt the drum friction test that's used  
3 elsewhere. Do it for two years, and during that time  
4 evaluate it, and at the end of those two years, decide  
5 whether to keep it or drop it.

6           The original rationale for not having a drum  
7 friction test is to some extent buried in obscurity.  
8 It was considered when the Bureau of Mines first took  
9 this up in 1955 or so and then dropped, and I don't  
10 know what the source of this is, the idea that I have  
11 in my mind, but the idea being and my understanding,  
12 and it's not supported, is that if a belt would pass a  
13 flame propagation test, it would also pass the drum  
14 friction test, and therefore the two tests were  
15 somewhat redundant.

16           There's no need to do two when one will do  
17 the job. Whether that's an accurate representation of  
18 decision making 50 years or so ago, I don't know, and  
19 it's somewhat irrelevant at this point. We think  
20 there's a need for a drum friction test to deal with  
21 the problem of frictional ignition. We should do it  
22 now, evaluate it for two years, and then based upon  
23 that evaluation, either keep it or not, and the  
24 discussion I think is an attempt to address those  
25 issues.

1 DR. MUTMANSKY: Okay. Jim, we also have a  
2 section in our discussion section here on other  
3 conveyor belt tests. Do you have any comments on that  
4 section?

5 DR. WEEKS: No. It's entirely about the  
6 drum friction test, and, Tom, do you have some  
7 comments about other tests?

8 MR. MUCHO: Yes. We conclude that with a  
9 paragraph that says, "All of the above testing be  
10 adequate gauges of fire resistance over the panel  
11 fills, that the correlation between the belt and the  
12 full scale gallery test performed by the U.S. Bureau  
13 of Mines is evident of belt laboratory scale test  
14 along with a drum friction test will sufficiently  
15 determine whether belt is fire resistant for use in  
16 U.S. underground coal mines."

17 In essence, we're saying we look at these  
18 other tests. I propose we talk about a paragraph on a  
19 static electricity test. We haven't found any  
20 application in U.S. coal mines, any issues in U.S.  
21 coal mines.

22 DR. WEEKS: The other test would arguably  
23 include a test for toxic emissions, so this might be a  
24 reasonable place to put the discussion of toxic  
25 materials.

1 MR. MUCHO: That's correct. Okay. Although  
2 you talked about adding it in on the BELT test, you  
3 might want to do the Toxic Index. You could put it  
4 either place I think.

5 DR. WEEKS: I think it makes sense to put it  
6 under other tests. That's my take on it.

7 DR. MUTMANSKY: Okay. Jim, are you  
8 recommending that we take the paragraphs that you had  
9 put together and put them here? Is that what you're  
10 recommending?

11 DR. WEEKS: Yes.

12 DR. MUTMANSKY: And we take them out of the  
13 other discussion section?

14 DR. WEEKS: Yes.

15 DR. MUTMANSKY: Okay. I don't see any  
16 problem with that. It's clear that they sort of come  
17 under the category of other tests so to speak, and if  
18 they're appropriate here, we'll put them here. Any  
19 comments on that from anybody else? Jerry? Tom?  
20 Felipe?

21 DR. CALIZAYA: A couple of comments. We are  
22 talking about MSHA should adopt this drum test. Are  
23 we saying this is mandatory? I understand that some  
24 companies are already doing this. If I'm not  
25 mistaken, Jim Walter mentioned that they had

1 implemented. It's kind of routine for them to have  
2 this, but I don't know if that one is still not up to  
3 the end or not.

4 MR. MUCHO: No one has implemented this.  
5 What Jim Walter did was over a period of years  
6 utilized belts that had passed the BELT test and belts  
7 that had passed other fire resistant standards around  
8 the world on a trial basis, and not actually using the  
9 drum friction test. That apparatus has hardly been  
10 used in the United States and certainly not used for  
11 any real evaluation since the '69 Act.

12 DR. WEEKS: Yes, any belt manufacturer  
13 however that is selling belts in the international  
14 marketplace has to be concerned with the drum friction  
15 test.

16 MR. MUCHO: Right. Yes.

17 DR. MUTMANSKY: Okay. Any other comments on  
18 this one?

19 DR. TIEN: So, Jim, just try to clarify.  
20 We're trying to do the test, conduct the test for two  
21 years and then make a decision, or MSHA will make a  
22 decision based on that?

23 DR. WEEKS: Yes.

24 DR. TIEN: That's what you were saying?

25 DR. WEEKS: Yes.

1 DR. TIEN: Okay. Is two years adequate?  
2 I'm just thinking this one out.

3 MR. MUCHO: The time period was originally  
4 three years. MSHA and Harry Verakis felt that it  
5 could be accomplished within two years, and we said  
6 fine, and so it will take some doing on MSHA's part  
7 and NIOSH's part will have to participate to get that  
8 done. They could probably do it in two years if they  
9 dedicated themselves to doing it.

10 DR. MUTMANSKY: Okay. Then Jim will be  
11 responsible for putting those two paragraphs into this  
12 discussion section, and we've already looked at those,  
13 and as long as they go in this section with reasonable  
14 wording and so forth, we are okay with this, Jim.

15 DR. WEEKS: All right.

16 DR. MUTMANSKY: So we will now move on to  
17 our next discussion section, and this is No. 7.

18 MR. MUCHO: Number 6, coordinate the BELT  
19 test with other countries, and Jim is up again.

20 DR. MUTMANSKY: I'm sorry.

21 DR. WEEKS: Well, we said it on Monday.  
22 Internationally, there's a variety of tests that belts  
23 used in coal mines have to meet. It will be useful  
24 for MSHA in developing and applying tests for belts to  
25 keep in mind this international marketplace, and to

1 the extent possible, coordinate with the international  
2 practices in evaluating belts. At first we thought we  
3 should adopt the same as what's been adopted  
4 internationally.

5           Then noted what's been adopted  
6 internationally covers a lot of territory, and there's  
7 a lot of diversity amongst coal mining countries about  
8 how they evaluate belts. Consequently, this is  
9 actually a little more than saying that MSHA should  
10 pay attention to what's happening internationally and  
11 act accordingly.

12           That doesn't give clear or emphatic guidance  
13 except to note that we're in a global marketplace and  
14 a global economy, and we need to be able to  
15 participate in that marketplace in that economy.

16           DR. MUTMANSKY: Well, I think this is very  
17 straightforward. The discussion is very short, but I  
18 don't think it requires references. I don't think it  
19 requires a lot of background material. Is the panel  
20 okay with the discussion section? Felipe?

21           DR. CALIZAYA: Yes.

22           DR. MUTMANSKY: Okay. It looks like we have  
23 unanimity on that, and we can go ahead with the next  
24 discussion, and that is on No. 7, Special Requirements  
25 for the Use of Belt Air. Was that you, Jerry?

1 DR. TIEN: Yes. I was just wondering if I  
2 can have about 30 seconds so I can put my information  
3 on the screen to have a comparison between the old and  
4 the new?

5 DR. MUTMANSKY: Okay, Jerry. I think that  
6 would be helpful.

7 DR. TIEN: Yes. We remember that yesterday  
8 we went through a lot of discussion over this  
9 particular No. 7 and No. 8 since these two are  
10 interrelated, so it makes sense if I may just combine  
11 them for the sake of discussion. If we can put them  
12 on the screen, you can see the comparison. We  
13 reworked them quite a bit. We changed the title, and  
14 so I think it will be useful at least to see the  
15 comparison of them. Yes, No. 7, that's the first one.

16 MR. MUCHO: You didn't put this in as  
17 foundation, did you?

18 DR. TIEN: Yes. Here we go. The black one  
19 was the old title. We refer to that as belt air usage  
20 analysis. After discussion, the new title will be  
21 Special Requirements for the Use of Belt Air, and as  
22 you can see, you look at the old wording of our  
23 recommendation, which is in black, the recommendation  
24 is pretty straightforward, pretty lengthy. Bill, if  
25 you can scroll down a little bit.

1           The red one will be the reworked, the newer  
2 version of the recommendation. The panel recommends  
3 the mines using the belt air, and the working section  
4 must be held to a higher standard. That involves the  
5 use of 1) AMS, 2) the belt materials. That must meet  
6 the BELT and other test standards, which reflects  
7 what, Jim, you just talked about, other tests that the  
8 panel recommended, and 3) more vigorous inspection  
9 procedures, which we also talked about yesterday  
10 toward the end by MSHA inspectors.

11           In addition, we recommend that the BELT and  
12 other test standards recommended by the panel be  
13 applied to all belt conveyors used in underground coal  
14 mines. That is the newly worded recommendation we  
15 just had yesterday. Now, the discussion on that is  
16 pretty straightforward because the issue has been  
17 around for quite a while, since the 1969 Coal Mine  
18 Health & Safety Act.

19           It had become more obvious when we got into  
20 the '80s and '90s, and if you remember correctly the  
21 fires as a result of the belt fires between 1980 and  
22 2006. I think 65. There was three fatalities  
23 associated with those fires, and one miner died of a  
24 heart attack in fighting the fires, and the other two  
25 came from the Aracoma last year, but it's not directly

1 relating to the belt entries, the use of belt air,  
2 although they're somewhat related to that.

3           Those are the three that are affiliated with  
4 that 65. Bill, go up a little bit. We can also  
5 recognize the primary reason for those belt fires are  
6 the frictional heating and the flame cutting and  
7 welding and electrical malfunctions being the primary  
8 reason for these fires. It's not directly relating to  
9 use of the belt air.

10           If you look down, the panel recognizes that  
11 there's a very argument for use the belt air, and the  
12 two reasons cited yesterday were 1) in the western  
13 coal mines where the cover is deep, they're bump  
14 prone, and they're very gassy. The benefit for using  
15 the belt air will allow the more air to be delivered  
16 to the working sections, but at the same time because  
17 the ground situation, we try to limit the exposure,  
18 the number of entries, to no more than three, so we  
19 have a dilemma.

20           It worked out to be using the belt air we  
21 can accommodate the requirement for limiting exposure  
22 to the ground conditions, but here at the same time  
23 providing the dilution for the methane, so that's the  
24 number one specific reason the panel felt that it is  
25 justifiable to use the belt air. Number 2 is for the

1 eastern coal mines, where it's very, very gassy. Even  
2 with the methane drainage programs, the methane is  
3 still very challenging to the mining situation.

4           In that particular situation, we felt that  
5 it is recommendable to use the belt air to increase  
6 the dilution to the dust and the gas standards in  
7 compliance with the requirement, so that's  
8 justifiable. Those are the reasons we gave yesterday,  
9 so we recognize that using the belt air in the face  
10 does not eliminate or reduce the conditions, but by  
11 extra requirements, such as use of AMS and extra care,  
12 the vigorous inspection procedures by MSHA inspectors.

13           We felt that all the concerns can be  
14 properly addressed, so we suggested that use of belt  
15 air is appropriate. Then we also, if we can get the  
16 next one, that's No. 8, that's MSHA being in charge  
17 with the responsibility of reviewing that process.  
18 That's the old recommendation. The district manager  
19 be charged with the responsibility of reviewing these  
20 that which everybody thought it appropriate.

21           Instead of having the separate petition  
22 process that to include the belt air use in the  
23 ventilation plan to be reviewed and approved by the  
24 district manager, by looking at all the conditions  
25 submitted, then we have to justify and provide

1 convincing reasons to be granted, so those are the  
2 discussions relating to two recommendations. Now,  
3 since the issue has been around for quite a while, so  
4 the references and studies are numerous.

5           We cited specifically two studies. One was  
6 done by MSHA in 1999. The other one was done by the  
7 committee in 1992, so in terms of references, I don't  
8 know if it's in No. 8 or No. 7 we cite at least a half  
9 a dozen references. Yes, there are a couple of them  
10 in the references section. That's No. 8. Bill, I  
11 wonder if you can go to No. 7 to see some other  
12 recommendations?

13           Yes, so we cite a list of references to be  
14 included in the discussion section. I open the floor  
15 to the panel for further comment and observations and  
16 additions or revisions.

17           DR. MUTMANSKY: Yes. Jerry, thanks for  
18 doing it in that manner. This was our most  
19 complicated set of revisions that we accomplished in  
20 the last couple of days, and it's important for us to  
21 pay attention to this particular discussion section.  
22 It's fairly obvious that we should take out some of  
23 the words in those discussion sections and that we  
24 should bring those discussion sections together, so to  
25 speak, in a viable manner I would say. Okay.

1 Questions if there are thoughts about that? Tom?

2 MR. MUCHO: Yes, just on the points of the  
3 valid arguments for using belt air. The current  
4 discussion combined deeper and high methane. Those  
5 need to be separated. Deeper mines the issue is the  
6 amount of horsepower and the amount of resistances to  
7 get the air down to those kind of depths and the  
8 number of shafts and so on, and all the complications  
9 related to deep mines.

10 High methane means that I need high volumes  
11 in lots of places to dilute and render harmless to  
12 methane and so forth, so while often those two are  
13 combined and reality out there in some of our mines,  
14 but they are two separate issues and need to be  
15 separated.

16 DR. WEEKS: Can I raise a question about  
17 that? I agree it's important to separate them, but my  
18 understanding of the issue with deep mines was that  
19 the problem of maintaining ground control required a  
20 limitation on a number of entries or something to that  
21 effect, and that it was because of the ground control  
22 problems that use of belt air for ventilation was an  
23 appropriate accommodation to the ground control needs.

24 MR. MUCHO: That was the bump prone mines in  
25 the western United States, which coincidentally many

1 of them are deeper, and coincidentally one of the sort  
2 of parameters for bump prone is depth. We generally  
3 don't see bumps until we get to depths greater than  
4 1,000 or 1,300 feet, depending on who you want to  
5 cite, so that's a separate issue.

6           That's was the first one that Jerry talked  
7 about, and then he talked about a second valid one  
8 being deeper and methane combined, and I'm saying they  
9 need to be separated in terms of not necessarily the  
10 discussion, but in deeper mines and/or high-methane  
11 mines.

12           DR. MUTMANSKY: Tom has a point. The point  
13 is that in some cases deeper mines have methane  
14 problems, and in some cases deeper mines have bump  
15 problems. It might be better that we look at those  
16 paragraphs and do a better job of addressing those  
17 issues. Jerry, perhaps you and I can look at those  
18 sections and rewrite them in an appropriate manner. I  
19 think there's plenty of material in the discussion  
20 sections, but it does need major revisions now.

21           DR. WEEKS: Well, let me go back to the  
22 discussion that you gave, Tom. There are two issues  
23 then with these mines: One is bumps, and the other is  
24 with increasing depth, it's harder to get sufficient  
25 air.

1           MR. MUCHO: Tremendous pressure losses  
2 getting the air down the shafts of the level mines.

3           DR. WEEKS: I understand the first one in  
4 relationship to using belt air. What's the second  
5 one? This is the problem of getting air down to deep  
6 mines. How does belt air fit into that?

7           MR. MUCHO: Well, in order to ventilate  
8 those mines efficiently, we need to maximize the  
9 ventilation capacity that we are able to do from a  
10 practical standpoint, and belt air does that. Instead  
11 of taking the air up to the face area, suffering that  
12 pressure loss, turning it around and heading it back  
13 down the belt where it's been dumped to return.

14           We put it in at the belt entry, or it's  
15 coming up the belt entry to the mouth, going to the  
16 face and being utilized at the face to dilute methane,  
17 reduce dust and --

18           DR. WEEKS: It's a problem with air  
19 conservation?

20           MR. MUCHO: Yes.

21           DR. WEEKS: Okay. All right. Thank you.

22           DR. MUTMANSKY: Yes. Jerry, go ahead. You  
23 got a comment to that?

24           DR. TIEN: Yes, just to add to what you're  
25 saying, or do you want to go ahead and finish?

1           MR. MUCHO: Yes, because I'm going to take  
2 that and go to another issue.

3           DR. TIEN: Okay. With that, I think, Jim,  
4 in way of a clarification, I think you and I talked  
5 about yesterday there are actually three issues we're  
6 going to separate. To bring the adequate amount of  
7 air to the face is difficult. Sometimes the depth  
8 contributes to that. Sometimes it's the fewer  
9 distance.

10           In other words, you do not have to be very  
11 deep, but you're still having problems to bring the  
12 air to the face, so the mine could be so large you  
13 have not traveled miles or miles to get at the face,  
14 and in some cases, there's no way you can even drill  
15 the shaft, so you need that additional air, and also  
16 the distance to bring the air to the face, so that's  
17 one issue. We talked about yesterday using the  
18 example of a salt mine.

19           They are very deep. Because they're under  
20 water, there's no way you can drill the shaft, so the  
21 amount of access for air to get down there is only  
22 through that shaft. That's where the problems start  
23 to come in, so that's another thing.

24           DR. WEEKS: Yes, I understand the issue. I  
25 appreciate the clarification.

1           MR. MUCHO: Okay. Good. Now, bigger than  
2 that though is when we look at this discussion  
3 section, and we talk about these issues, and we've  
4 ended up with this recommendation for the district  
5 manager to evaluate this. I have a question as to by  
6 discussing those specifics, are we somehow providing  
7 direction to the district manager or somebody provide  
8 direction to the district manager that these are the  
9 conditions that should be considered in order to  
10 approve it.

11           We discussed in earlier meetings, for  
12 example, I pointed out a number of small mines in  
13 Pennsylvania are utilizing belt air. Right offhand to  
14 my knowledge of those mines it doesn't seem to fit any  
15 of these things that we say are valid, and of course  
16 we wrote this section originally, or those who wrote  
17 it, wrote it with the intention of going to the  
18 petition process, which has prescription for validity,  
19 a valid reason to do it built into it.

20           Now you see the problem I think in the  
21 discussion section might either raise or might raise.

22   Yes. Sorry, Jim.

23           DR. WEEKS: Here's the way I understand it.  
24 Those three issues, two having to do with depth, the  
25 other having to do with gas are instances that say if

1 you want to use belt air, you've got to get something  
2 for it. There's got to be a problem that it solves.  
3 It's not simply a matter of convenience, and these are  
4 problems. There are obviously other problems that may  
5 appear that would be solved by using belt air.

6 I think that's the implication saying. It's  
7 not simply a routine part of planning a mine. There  
8 has to be a real reason for it.

9 MR. MUCHO: Yes. Just lay the cards on the  
10 table. The other reason is, and the other situation  
11 that comes up I don't want to buy a bigger fan, I  
12 don't want to put a bigger horsepower motor on. I can  
13 ventilate efficiently if I use belt air. I can't  
14 ventilate efficiently if I don't use belt air, and so  
15 the question is is that a valid reason to do it?

16 DR. WEEKS: Well, that's an issue that we  
17 decided to put on the district manager's plate.

18 DR. MUTMANSKY: Yes, we did. That's  
19 correct. The way we decided that, Tom --

20 MR. MUCHO: If that's what we decided,  
21 that's fine. I don't think that's clear from the  
22 discussion as it sits right now.

23 DR. WEEKS: Well, then fix it.

24 DR. MUTMANSKY: This is one area where major  
25 revisions in the suggestion section are necessary. It

1 may require time that we can devote to it at today's  
2 meeting, and I think it's necessary since I wrote much  
3 of that material originally in conjunction with Jerry,  
4 and maybe Jerry and I should work on that and seek the  
5 approval of the other panel members. This is one area  
6 where the other panel members must weigh in I'm afraid  
7 on all the words we put in the discussion section, so,  
8 Jerry, would you like to say something?

9 DR. TIEN: I agree with Tom. The third  
10 situation, since this panel over this year we see the  
11 benefits of using the belt air provided if certain  
12 things are being accomplished at the same time such as  
13 using AMS and more vigorous inspections and other  
14 things stipulated in the recommendation, should we put  
15 a little bit more stronger recommendation in terms of  
16 for the district manager to make their decision? In  
17 other words, the reason you were talking about for  
18 them not to reject, or is that appropriate to do that?

19 DR. WEEKS: Like what?

20 DR. TIEN: Like you have to weigh in the box  
21 we said yes to --

22 DR. WEEKS: Yes, you have to weigh the  
23 policy.

24 DR. TIEN: Just like any other system, there  
25 are pros and cons, and it looks like in this

1 particular situation there's more pros than cons.

2 DR. WEEKS: Yes. The issue that Tom raised  
3 about I don't want to buy a bigger fan, that's not a  
4 health and safety issue.

5 DR. TIEN: Yes.

6 DR. WEEKS: That's an issue of economics  
7 essentially, and my thinking is that MSHA, the Health  
8 & Safety Agency, if you're going to use belt air,  
9 which tolerates certain hazards to exist, you've got  
10 to get something for it, and there's got to be a  
11 health and safety benefit from it.

12 DR. TIEN: If the mine will be able convince  
13 him, what other situations might be such that they do  
14 not provide less safe -- well, again that word.  
15 They're just as safe if not safer or something.

16 DR. WEEKS: Well, we're dealing with things  
17 that are inherently difficult if not impossible to  
18 measure, and really it is a judgment call.

19 DR. MUTMANSKY: Remember, we folded this  
20 into the ventilation plan so to speak, as part of the  
21 mine ventilation plan. Every aspect of the mine  
22 ventilation plan has to be considered by the district  
23 manager as is this acceptable from the standpoint of  
24 health and safety, and the ventilation plans as  
25 approved by the district manager will have many

1 characteristics, many variables that he must consider.

2 I think the only problem we have here is  
3 what do we want to express in the discussion section  
4 to the district manager as his role in assessing the  
5 use of belt air in the working section?

6 DR. WEEKS: Something like the following:  
7 In order to use belt air, there must be a demonstrable  
8 health and safety benefit to offset the hazards that  
9 are tolerated, or something like that, inherent in the  
10 use of belt air, and in the case of bump prone mines,  
11 it's ground control. In the case of gassy mines, it's  
12 gas control, and in other situations like the depth,  
13 it's a question of feasibility.

14 DR. TIEN: Yes. Got you.

15 DR. MUTMANSKY: If you're okay with that,  
16 Tom --

17 MR. MUCHO: Two votes here are okay.

18 DR. MUTMANSKY: Okay. Felipe?

19 DR. CALIZAYA: Yesterday we mentioned this,  
20 but I don't know if it's appropriate today to talk  
21 about it again. We are not saying anything about two  
22 entry systems, and the one that you already mentioned,  
23 it's mainly a two-entry system, and I don't know if we  
24 can have one discussion point for that two-entry  
25 system. I agree with Jim on those mines with the

1 special problems. They have to do something else to  
2 use the belt air.

3           Maybe redundancy of monitors would be one  
4 specific topic. Redundancy of monitors we have talked  
5 about in addition to CO monitors. They also need to  
6 monitor methane and other gases for gassy mines. For  
7 the mines that have ground control problems, maybe  
8 they should also have monitors to find out whether the  
9 pillars are in good shape or something like that. I  
10 don't know about that.

11           I don't know exactly whether they are doing  
12 any monitoring about ground control. Maybe that's the  
13 tradeoff because physically we are talking about  
14 trivia in the number of entries. If the plan is to  
15 develop mines with three entries, now we are talking  
16 about panels with two entries, and we are limited. We  
17 will talk about cases where both entries are disabled.  
18 There is no escapeway, and then maybe the need of  
19 having a third shared escapeway would be an  
20 alternative. Along those lines, maybe we can talk  
21 about the two-entry system.

22           DR. TIEN: I agree. Would that concern be  
23 addressed in the ground control plan?

24           MR. MUCHO: Yes. Let me recommend this.  
25 It's get's a little afield here. Currently, the

1 regulations provide for use of belt air, and MSHA to  
2 this point has left the two-entry system to the  
3 petition process. I would suggest that in our  
4 discussion section we make the comment that MSHA, if  
5 they move forward with our recommendation to put it  
6 within the ventilation plan and under the district  
7 manager that they make will want to consider that for  
8 two-entry mines.

9 I'm not sure if they can do that technically  
10 or legally, but if they can, just leave that kind of  
11 decision up to MSHA or leave it in the petition  
12 process. Basically, what we said so far is we're not  
13 really dealing with two-entry mines specifically.  
14 We're dealing with what's covered under the  
15 Regulations 350, 351, 352.

16 DR. TIEN: Well, you and I have some work to  
17 do.

18 DR. MUTMANSKY: Yes. Jerry, how about if  
19 you and I tackle that. I basically feel that the  
20 comments that have been made are very appropriate. We  
21 need to reconstruct the discussion section, and  
22 because it's an important issue, we need to get back  
23 to the panel regarding whether our words are  
24 appropriate I would guess. This may be the one  
25 discussion section that needs major effort on our

1 part.

2 DR. TIEN: Yes.

3 DR. MUTMANSKY: Many of the others would be  
4 very minor efforts I think.

5 DR. WEEKS: I'm assuming that the process  
6 that we're going to follow here is that you all will  
7 revise it and circulate it amongst the panel members?

8 DR. TIEN: That's correct.

9 DR. WEEKS: Then there might be actually  
10 another round of revisions after that?

11 DR. MUTMANSKY: I would guess.

12 DR. TIEN: Yes, that's correct.

13 DR. MUTMANSKY: I would guess because as we  
14 have witnessed in the last several days, a single  
15 person's words can be greatly improved if everybody  
16 thinks about the words and tries to make improvements,  
17 so I would guess it would be necessary to take --

18 MR. MUCHO: Yes. Just a follow-up comment.

19 I think, if I can remember correctly, MSHA's  
20 rationale for the two entries remaining in the  
21 petition process, and then I'll just state this in  
22 general is that it's such a special case because of  
23 two entries affecting so many other things in more  
24 normal three- or four-entry developments and so forth  
25 that that's why they left it that way.

1           Again, if they follow the recommendation we  
2 have and with the district manager, they may feel they  
3 have broad enough control of it that they don't need  
4 to rely on the petition process. I think that was the  
5 rationale and so forth. Somebody from MSHA might want  
6 to address that or not, but we can move on.

7           DR. MUTMANSKY: Okay.

8           DR. TIEN: There's a working phase, which  
9 you're looking at.

10          DR. MUTMANSKY: There's a comment that has  
11 come in to us that the No. 8 recommendation still has  
12 a few words that could be reworked possibly.

13          DR. TIEN: Yes.

14          DR. MUTMANSKY: At this point in time, let's  
15 just take a quick look at that and see whether or not  
16 we should reword this No. 8 recommendation. "The  
17 panel recommends that MSHA evaluate the safety of belt  
18 air used at the working face as part of the approval  
19 of the mine ventilation plan," and that's the sentence  
20 where there's some question as to whether or not the  
21 wording is appropriate.

22          Again, when we go to the second sentence,  
23 "The district manager must take special care to  
24 evaluate whether the belt air can be routed to the  
25 working face in the manner that is safe for all miners

1 involved," we purged the use of the word "face" in  
2 most of our recommendations, but we have not done that  
3 here.

4 DR. TIEN: Yes.

5 DR. MUTMANSKY: And because Jürgen has  
6 approved Tom voting on his behalf, we can, if you  
7 would like, make corrections to this recommendation at  
8 this time.

9 MR. MUCHO: Specifically what?

10 DR. MUTMANSKY: Specifically, we should say  
11 something of the sort that MSHA evaluate the safety of  
12 use of belt air coursed through a working section as  
13 part of the approval, and again we would want to use  
14 the words "working section" or some similar words in  
15 the second sentence, so I'm open for panel interaction  
16 on this. Should we make our changes at this point?

17 DR. TIEN: Mr. Chairman, I think this  
18 editorial revision does not change the character or  
19 spirit of what we intended it to. I don't foresee any  
20 problems personally.

21 DR. MUTMANSKY: All right. However, as  
22 chairman, I would like to have full approval with the  
23 proxy vote of Jürgen on this, and so I would recommend  
24 that we do it formally and that we change the wording  
25 at this particular time as appropriate. Would you

1 like to recommend wording? Tom?

2 MR. MUCHO: I thought what you said was all  
3 right.

4 DR. MUTMANSKY: Yes. Okay. Evaluate the  
5 safety of --

6 MR. MUCHO: You said the use of belt air  
7 coursed to the working section.

8 DR. MUTMANSKY: Of the use of belt air in  
9 the working section.

10 MR. MUCHO: But you said "coursed to."

11 DR. MUTMANSKY: Coursed to the working  
12 section. You're right. Coursed to. "As part of the  
13 approval of the mine ventilation plan, the district  
14 manager must take special care to evaluate whether the  
15 belt air can be routed to the working section in a  
16 manner that is safe for all miners involved." At this  
17 point in time, I would move that we consider this  
18 wording change and that we read it one more time and  
19 then vote on it using the proxy vote of Dr. Brune.

20 "The panel recommends that MSHA evaluate the  
21 safety of the use of belt air coursed to the working  
22 section as part of the approval of the mine  
23 ventilation plan. The district manager must take  
24 special care to evaluate whether the belt air can be  
25 routed to the working section in a manner that is safe

1 for all miners involved." Any thoughts about that  
2 now?

3 DR. TIEN: Yes. Taking a special care,  
4 would it change anything if we change the word "care"  
5 to "emphasis" or "attention" or something to that  
6 effect, or is it the same thing? Does it change  
7 anything?

8 MR. MUCHO: I like care.

9 DR. TIEN: Care? Okay.

10 MR. MUCHO: I think that might be getting  
11 out of the editorial --

12 DR. TIEN: Okay. That's good.

13 DR. MUTMANSKY: Anybody else? We can change  
14 any word now. If we're going to change the  
15 recommendation, we can change any of the words.  
16 That's my thought.

17 DR. WEEKS: But let's not.

18 DR. MUTMANSKY: Let's not?

19 DR. WEEKS: Let's not change anymore.

20 DR. MUTMANSKY: Let's not change anymore?

21 Okay.

22 DR. WEEKS: I think it's fine.

23 DR. MUTMANSKY: Jim recommends we not change  
24 any additional words. How does everybody else feel?

25 DR. CALIZAYA: I agree.

1 DR. MUTMANSKY: You like that? Okay. Let's  
2 take a vote, and the first vote will be Tom and Jürgen  
3 by proxy.

4 MR. MUCHO: Yes, for myself and yes for Dr.  
5 Brune.

6 DR. MUTMANSKY: Jerry?

7 DR. TIEN: Yes.

8 DR. MUTMANSKY: I vote yes. Jim?

9 DR. WEEKS: Yes.

10 DR. CALIZAYA: Yes.

11 DR. MUTMANSKY: We have taken care of that  
12 problem. Thank you for going through that with me.

13 DR. TIEN: Shall we go back to No. 7?

14 DR. MUTMANSKY: Should be go back to No. 7?  
15 That's a good question. Are we okay there? I think  
16 we're okay there, Jerry.

17 DR. TIEN: Yes.

18 DR. MUTMANSKY: It's worthwhile looking at  
19 it though to make certain that everything is  
20 appropriately stated, okay? Okay. Now, as best as I  
21 can see, it is going to be the duty of Jerry and  
22 myself to go back to the discussion section, rework it  
23 and rewrite it and dispense it to all members of the  
24 panel for their approval so that the discussion  
25 section properly reflects the changes in these two

1 recommendations and is appropriate to be put into the  
2 final report.

3 DR. TIEN: Yes. That's correct, yes.

4 DR. MUTMANSKY: All right. Good. Okay.

5 What else do we have? Now we are moving to No. 9.

6 DR. WEEKS: When can we expect to see  
7 something from you on that?

8 DR. TIEN: Timewise?

9 DR. MUTMANSKY: I'm going to recommend, Jim,  
10 that all changes to the discussion sections be  
11 completed by September 30. Therefore, Jerry and I  
12 should try to get words to you before that time so our  
13 final discussion can be submitted to Linda by  
14 September 30. Is that okay, Jerry?

15 DR. TIEN: Yes.

16 DR. MUTMANSKY: Is that okay with other  
17 members of the panel? September 30 will be our  
18 deadline for getting final changes to Linda and her  
19 staff so that she will have plenty of time to start  
20 work on the final report.

21 DR. WEEKS: That's less than two weeks.

22 DR. MUTMANSKY: Yes, sir. Yes, sir, it is.  
23 Okay. Everybody okay with that? Okay. Now I think  
24 we want to move on to the recommendation called  
25 discontinuing point type heat sensors, and as long as

1 nobody finds any problems in the recommendation, we're  
2 going to talk about the discussion section, so who was  
3 it?

4 MR. MUCHO: That's me.

5 DR. MUTMANSKY: Okay. Tom?

6 MR. MUCHO: I think the recommendation is  
7 straightforward in terms of what we're looking at,  
8 just discontinue point-type heat sensors in U.S. coal  
9 mines. No problem using them in and around the  
10 terminal group area for fire suppression activation.  
11 The discussion, as I try to keep all the discussions,  
12 is to try to keep them short and sweet, and it is  
13 fairly that. It just says that we're making this  
14 comment in response to a request by Richard Stickler  
15 at the opening meeting.

16 Then a statement about our justification for  
17 that, and we rely on a body of research and actual  
18 experiences with the sensors in the U.S. to note that  
19 there is a big gap between AMS-type sensors and the  
20 point-type heat sensors. Then we go on to mention for  
21 that reason we think it should be in all mines while  
22 we seem to be looking at belt air mines, I think it  
23 makes sense to look at all mines in that regard, and  
24 that's the discussion.

25 DR. WEEKS: I came across some data

1 someplace that pretty much had a comparison of AMS  
2 with the point-type heat sensors and their ability to  
3 provide an early warning of a fire, and if I remember  
4 the data correctly, it was very convincing the  
5 superiority of the AMS over the point-type heat  
6 sensors. I think it should be included in the  
7 discussion.

8 MR. MUCHO: Well, I'm not sure which one  
9 you're talking about, but the references, or many that  
10 worked, worked by Conti, for example. I don't know if  
11 that's what you're referencing.

12 DR. WEEKS: I honestly don't remember. I  
13 can dig it up. I just think it was compelling and  
14 needs to be included.

15 MR. MUCHO: The references that I've  
16 included have a lot of data that's very compelling,  
17 and I've mentioned the statement that Dr. Litton made  
18 in one of his RI that point-type heat sensors would  
19 need to be on a four-space seam to be comparable to a  
20 CO sensor, and I think that statement might be a 9380.  
21 I'm not sure, but it might be in one of these. I'll  
22 double check that, but I think we're pretty well  
23 covered in terms of justifying through the references.

24 DR. MUTMANSKY: Yes. Tom, I make note of  
25 the fact that when you put your references into this

1 discussion section, the format of the references is  
2 different than the format that I use, and I'm not  
3 certain that my format is in agreement with the MSHA  
4 formatting requirements for their reports, so I would  
5 like to give permission to the MSHA staff to put all  
6 of the references into a uniform format.

7 I assume there is a style manual for MSHA  
8 reports, and we should probably give them permission  
9 to put it into the standard format for MSHA reports.  
10 I think it's necessary to do that at this point in  
11 time. Anybody in agreement with that?

12 DR. TIEN: Yes.

13 MR. MUCHO: Yes. I was deliberately sloppy  
14 in that regard because it made no sense to format it  
15 because I wasn't formatting correctly, so why do it.

16 DR. MUTMANSKY: Okay. Let the record show  
17 that we are in agreement that the MSHA staff has  
18 permission to rework our references into a  
19 standardized format that meets their own needs.  
20 Jerry?

21 DR. TIEN: Yes. Also probably we should  
22 extend to the citing of those formats in the text as  
23 well, yes.

24 DR. MUTMANSKY: Yes, yes. I might mention  
25 also that a couple of recommendations ago, I saw a

1 number of different minor corrections that I would  
2 like to make to the paragraphs just regarding  
3 formatting and a few other things, and I think it may  
4 be absolutely necessary for the MSHA staff to look at  
5 those and do very routine grammatical and punctuation  
6 corrections where appropriate.

7           We will have the opportunity to read their  
8 words in our discussions at least one more time again,  
9 and I would like to recommend that they have  
10 permission to make those minor grammatical,  
11 punctuation errors and so forth in the final  
12 preparations of the report, subject to our ability to  
13 read them over at least one more time. Any  
14 discussions about that?

15           DR. WEEKS: Yes, I think we should  
16 acknowledge that reformatting references can be a  
17 really tedious chore, and I don't know what it means  
18 to give permission to people to do a really tedious  
19 chore, so if there's anything that we can do to make  
20 that easier, we should do that.

21           DR. MUTMANSKY: I will also bring up one  
22 other topic at this point in time. At the beginning  
23 of our meeting, Debra Janes asked me if I would help  
24 the MSHA staff in providing some references that they  
25 could not easily lay their hands on that are in our

1 discussion sections, and sometime this afternoon, I'd  
2 like to get that list of references out and ask for  
3 your help in supplying those references to her.

4           There are some that would be very easy for  
5 us to provide, and there will be others a little more  
6 difficult, but we just simply have to locate the  
7 proper reference and give her a copy so that they  
8 would always be available to the MSHA staff and to  
9 Congress if they ever needed them, so we will discuss  
10 that later this afternoon, and I do believe that it's  
11 appropriate for us to give them some leeway in making  
12 changes as necessary. Any other discussion of that?

13           Okay. I think the point-type heat sensor  
14 recommendation is very straightforward. There's no  
15 controversy involved here, and if Jim wants to  
16 interact with Tom to add an additional reference, I'm  
17 in favor of that, in particular if it's a compelling  
18 set of arguments as to why the point-type heat sensor  
19 may be appropriately discontinued at this particular  
20 point.

21           DR. WEEKS: Well, I'll take a look at what  
22 Tom wrote in the data. It may not be necessary.

23           DR. MUTMANSKY: Okay. Good. Jim, if you're  
24 satisfied, then I'm satisfied as well. Okay. Are we  
25 okay to move on to the very next recommendation on

1 smoke sensors. In the discussion section, who  
2 presented this one?

3 MR. MUCHO: That's me.

4 DR. MUTMANSKY: Okay, Tom.

5 MR. MUCHO: Okay. You see the  
6 recommendation there. The recommendation is for MSHA  
7 to also consider rule making that would require the  
8 use of smoke sensors at belt mines in addition to CO  
9 sensors, and the other part of this recommendation  
10 goes to revising Part 75-1100 to 1103 Fire Protection.  
11 Actually, maybe the second part is more key than the  
12 first.

13 The more I kept looking during this meeting  
14 at Part 75-1100 to 1103, it certainly has a lot of  
15 holes in it for appearances of some things we talked  
16 about. The discussion goes on to talk about the body  
17 of research that goes to smoke sensors providing an  
18 earlier warning in general to both CO sensors and to a  
19 greater extent over point-type heat sensors, so in  
20 some cases, it's some of the same research that we  
21 just talked about.

22 That's been shown in a number of cases in  
23 general, and as we talked about, we also make the  
24 comment to provide earlier detection and more  
25 reliable. What the more reliable goes to is the issue

1 of the type of combustion process or heating that  
2 might be going on that may be more signaling the smoke  
3 as opposed to signaling the CO.

4           By using a combination of smoke sensors at  
5 least to some extent with CO, we might do a much  
6 better job of covering the field of earlier warning  
7 and covering the field of more reliable early warning  
8 detection. The recommendation in terms of use of  
9 these is considered. You put them behind the terminal  
10 group, the belt drive and take them up and midway on  
11 the belt line and towards the end of it.

12           That's just a recommendation. The idea  
13 being not to be excessive, but let's try to utilize  
14 them and see if that can really help us out in that  
15 regard. We recognize that what we're asking for is a  
16 sensor that is maybe not on the shelf right now.  
17 There are some industrial types that are being tried  
18 that maybe can be used. We don't know the answer to  
19 that question, and so we talk about MSHA considering  
20 some phase-in period while this evaluation goes on.

21           Then we go on to talk very briefly that MSHA  
22 consider revising 75-1100 to 1103. One main reason  
23 being that it was put forth in 1972. A number of  
24 things have changed. We have seen a number of things  
25 since such as the whole suite of recent mine fires,

1 and we start with Aracoma and work back through 1984  
2 and so on and so forth that if shown issues that  
3 really aren't addressed or aren't very well addressed  
4 in those things.

5 DR. MUTMANSKY: Okay. Thank you, Tom. Do  
6 we have any comments here from the panel concerning  
7 the discussion section in this recommendation?

8 DR. WEEKS: Yes. At our meeting in  
9 Birmingham when the topic of smoke detectors came up,  
10 there seemed to be an instant and enthusiastic  
11 consensus amongst participants there that smoke  
12 sensors were unreliable and hard to maintain and so  
13 on, and I think in the discussion we need to address  
14 those criticisms head on. You may have already done  
15 it in some fashion.

16 MR. MUCHO: Yes. We state, "The panel  
17 recognizes this use of smoke sensors has been limited  
18 in coal mining applications due to the 1) the rigorous  
19 environment in which they would be used, for example,  
20 changing and high humidity, dust, rock dusting and so  
21 forth, and 2) the response and susceptibility of the  
22 sensor due to the environment and conditions,  
23 depending on the smoke sensor type, for example,  
24 ionization or optical base."

25 What that refers to is if I'm using an

1 optical-type smoke sensor, then dust will show up as  
2 an optical issue and may not be reliable. The type of  
3 sensors that we're talking about, the industrial type  
4 as well as a prototype that Dr. Litton has designed,  
5 which is a combination ion and optical sensor, address  
6 those kinds of issue or intended to. Dr. Litton's  
7 prototype by being both an ionization and optical, it  
8 looks at the situation from both aspects.

9           Ionization being that it's going to  
10 ionization and go to a light scattering measures of  
11 particles and so forth. It looks at those too and  
12 says both of them tell me that I have smoke here and  
13 not something else, and if the answer is yes, then  
14 I'll send a signal I got a problem here. The  
15 industrial type use different techniques to deal with  
16 those issues, filtering.

17           A number of them use pumps to clean filters  
18 and look at the kind of issues we've had where rock  
19 dust builds up and so on and so forth, so the types of  
20 sensors that we're talking about are aimed at  
21 addressing those maintenance issues. The question is  
22 whether they do it or not, and that's the evaluation  
23 period.

24           DR. WEEKS: It's there.

25           MR. MUCHO: "We recognize the smoke sensor

1 has been limited due to the..."

2 MR. MUCHO: Yes. Right.

3 DR. MUTMANSKY: Okay. Are there any  
4 permissibility issues here, Tom, or are these things  
5 going to be easily recognized as being permissible  
6 devices?

7 MR. MUCHO: You better ask somebody from  
8 MSHA. I don't ever recall any permissibility issues,  
9 and we're tying it into the system, which the system  
10 is tied that way, but the only issue I know of is with  
11 a smoke sensor that comes out of South Africa, and  
12 that's because of radioactivity, not because of  
13 permissibility.

14 DR. MUTMANSKY: Okay.

15 MR. MUCHO: But maybe somebody at MSHA can  
16 comment. They all are such low voltage, such low-  
17 amperage devices that I don't think so.

18 DR. MUTMANSKY: Okay. Anybody here from  
19 MSHA would have a thought on that? Mike and Harry are  
20 both racing for the microphone.

21 MR. KALICH: There are various sensors in  
22 use, and the AMS system also say, for instance, on  
23 longwalls there are permissible sensors that are  
24 within 150 feet of the face. They're designed and  
25 tested so they won't ignite methane, and the

1 outstation that operates the sensor is designed so  
2 that the energy supplied to the sensor will not cause  
3 a methane ignition.

4           There are those types of sensors and devices  
5 available with the AMS systems to be able to be used  
6 in return airways in areas where permissibility is an  
7 issue and is required.

8           DR. MUTMANSKY: Okay. Harry, do you have  
9 anything to add to that?

10           MR. VERAKIS: Yes. I would say in the belt  
11 entry it's not required to be permissible, so your  
12 smoke sensors and your CO sensors in that belt entry  
13 would not be required to be permissible. You would  
14 not have a permissibility issue there unless you had a  
15 methane problem that required either the sensors to be  
16 intrinsically safe or explosion proof.

17           DR. MUTMANSKY: Okay. Thank you, Harry, and  
18 thank you, Mike. Okay. Are we okay on this? Are  
19 there any comments in addition to the ones we've  
20 already taken? Felipe?

21           DR. CALIZAYA: Well, this is again a  
22 question to MSHA personnel. Do we have limits for  
23 smoke? I'm talking about upper limits, a lot of  
24 limits or anything along those lines.

25           DR. WEEKS: In terms of personal exposure to

1 smoke?

2 DR. CALIZAYA: No. I'm talking about TLVs  
3 or that kind.

4 MR. MUCHO: Jim can address that.

5 DR. WEEKS: Well, yes. There are exposure  
6 limits for individual ingredients in smoke, and then  
7 there's also a formula for combining the effects of  
8 those individual ingredients in their TLVs, and there  
9 are also exposure limits that have been adopted by  
10 MSHA, so yes.

11 DR. CALIZAYA: Okay.

12 DR. MUTMANSKY: Okay.

13 MR. MUCHO: That's just another issue for  
14 the heck of it. There's been considerable resources  
15 where I thought Felipe was going on the amount of  
16 smoke that should trigger a smoke sensor for use in  
17 coal mines. There's been a considerable amount of  
18 research to do that, and that's tied to this earlier  
19 warning aspect too at the level that has been put  
20 forth, and it's in the regulations right now. At  
21 those levels, they provide that earlier warning  
22 capability.

23 DR. WEEKS: The other matter is not all  
24 ingredients in smoke have exposure limits. Most of  
25 them do, but not all.

1 DR. MUTMANSKY: Okay. In this particular  
2 case now do we feel comfortable with the discussion  
3 section, and are there any additional comments  
4 regarding the discussion on smoke sensors in this  
5 case? Okay. There being no more additional comments,  
6 I would like to discuss whether or not we would like  
7 to take one more of our discussion sections before we  
8 go to lunch?

9 DR. WEEKS: Excuse me. Let me just give a  
10 slightly longer answer to Felipe's question.

11 DR. MUTMANSKY: Sure.

12 DR. WEEKS: My guess is, and Tom can correct  
13 me, is that if there's smoke from a fire that the  
14 smoke sensor would go off long before any exposure  
15 limit would be reached. Yes. Okay.

16 DR. MUTMANSKY: Okay. In my listing here,  
17 the next one is Diesel Discriminating Sensors. Is  
18 that correct?

19 MR. MUCHO: We covered that one.

20 DR. MUTMANSKY: We did that one?

21 MR. MUCHO: We're on No. 13, AMS Operator  
22 Training Certification and whatever.

23 DR. MUTMANSKY: And we did No. 12 also I am  
24 told, so the next one that we want to consider is AMS  
25 Operator Training Certification, and that's No. 13.

1           MR. MUCHO: That's Tom's, and that's why he  
2 wanted to take it and be done. Now, I'm done after  
3 this. I wanted it done before lunch.

4           DR. MUTMANSKY: All right. Good, Tom, so  
5 would you just simply outline your discussion section  
6 here, and we will hopefully be able to take care of  
7 that.

8           MR. MUCHO: We're recommending that MSHA  
9 commence rulemaking that require the qualifications  
10 and certification of AMS operators, and of course 301  
11 defines what an AMS operator is. We added the point  
12 to the recommendations the highest priority of the AMS  
13 operator is operating the AMS system.

14           Okay. In our current discussion section, we  
15 go through briefly the justification why we make this  
16 recommendation, justification being things like the  
17 Aracoma fire incident and other incidents where the  
18 critical actions of the AMS operator are obviously  
19 noted and in some cases some people may be second-  
20 guessing those actions and feeling that they may be  
21 adding to a problem or could have been maybe better  
22 routes to a problem.

23           In looking at that what we deduced is that  
24 the AMS operator is critical to the safety system at  
25 the mine, and obviously if a mine is in some type of

1 emergency, they're very critical. We go through the  
2 fact under the current regulations training was  
3 required. It was required annually. There's a  
4 provision that tells the AMS operators what to do.

5           That's fine, but our question is do we have  
6 an operator who A) understood the training that they  
7 have, B) understand what their duties are, C)  
8 understand what they need to do, and D) are they  
9 qualified to make some of the calls or provide some of  
10 the guidance they may even make maybe from a mining  
11 background standpoint, from maybe understanding the  
12 physical underground mine standpoint, those kinds of  
13 things?

14           Those are the issues that we recognize. We  
15 said in mining there is basically a provision of  
16 qualifying and certifying people that are in these key  
17 safety roles. AMS operators are relatively new, since  
18 the '80s or so, but there's no reason not to look at  
19 them in the same way, and somebody ought to do it.  
20 I'll add a comment here that additionally I noticed we  
21 had some concerns about this recommendation because  
22 MSHA has seemed to shy away from certifying people,  
23 leaving it to the states and so forth.

24           I notice in the recommendation on mine the  
25 actions that MSHA has taken in terms of mine rescues,

1 that they're looking at certifying mine rescue people,  
2 which is very analogous to the AMS operator thing. It  
3 looks like MSHA's not shy in that area, so I feel a  
4 little bit better about this recommendation of doing  
5 that, and we have left it open in the discussion. We  
6 don't go to what qualifications might be.

7           We're leaving that out in MSHA's domain to  
8 figure out what these kind of qualifications would be.  
9 We recommend some things like we think at least on a  
10 semi-annual basis the operator should be a day  
11 underground to understand the physical environment,  
12 how the mine infrastructure is installed and so forth  
13 in the event that they need to tell people to go to  
14 say an electrical installation and pull power on a  
15 belt or something like that.

16           They understand these kinds of things and  
17 where they're at and where they're located and what's  
18 it going to take for that person to do it. That's it.  
19 Now, what we don't go into in the discussion is the  
20 last sentence that we added saying the high-priority  
21 AMS operator. That was relative to a lot of feedback  
22 we got about the length of AMS operators days  
23 sometimes being 12 hours, the extent of their duties  
24 sometimes wearing so many hats you couldn't keep track  
25 of what hat to have on at any point in time.

1           In the recommendation we try to address that  
2 without being prescriptive by saying that that should  
3 be their highest priority, so we probably need to add  
4 some language in the discussion to just say what I  
5 just said.

6           DR. WEEKS: Yes, and not only wearing so  
7 many hats, some of those hats have nothing to do with  
8 health and safety. Those clearly you could say they  
9 shouldn't be bothered with that, but if they're  
10 concerned with other issues having to do with health  
11 and safety, that arguably fits within their realm. I  
12 did a little research on the shift length issue as  
13 well and wrote a paragraph that I could give to you.  
14 It's a short paragraph. Should I just kind of read it  
15 rather than --

16           DR. MUTMANSKY: Yes, why don't you read it,  
17 Jim. It would be worthwhile.

18           DR. WEEKS: By way of background, NIOSH  
19 published a monograph on this topic in 2004. The  
20 title was *Overtime and Extended Work Shifts, Recent*  
21 *Findings on Illness, Injuries and Health Behaviors,*  
22 and then there was another chapter of a book on work  
23 organization. The book is *Preventing Occupational*  
24 *Disease and Injury* published by the APHA, and they  
25 were essentially in agreement on what they were

1 saying.

2           This is what I wrote, "Extended work shifts  
3 up to 12 hours and other occupations have been  
4 associated with decreased performance, reduced  
5 attentiveness and an increase in stress, injuries,  
6 cardiovascular disease and errors. As a consequence,  
7 we suggest that MSHA evaluate the length of the  
8 workshift for AMS operators. If AMS operators are  
9 less attentive and more prone to errors, then the  
10 consequences could be significant for miners, who are  
11 dependent on them." Basically, that's all.

12           DR. MUTMANSKY: I think it's worthwhile to  
13 discuss this in the discussion section. In particular  
14 because the question may come up did we consider it at  
15 all, and this at least shows that there was discussion  
16 and that there was recognition of the fact that in  
17 some cases there may be problems with these long  
18 shifts. It's important I think from that sense at the  
19 very least.

20           I'm open to discussion from the panel as to  
21 whether or not we should accept Jim's paragraph and  
22 discussion here, and I would like to hear what the  
23 other panel members feel. Felipe?

24           DR. CALIZAYA: I agree with that. I think  
25 we have on more than one occasion the AMS operators

1 were overloaded, and they were doing things that were  
2 not really safety issues, and I think we need to  
3 distinguish this in two sections. I think Tom  
4 mentioned about this other activities, and Jim  
5 mentioned about the extended period, so I would like  
6 to --

7 DR. MUTMANSKY: Yes. Jerry, do you have any  
8 thoughts?

9 DR. TIEN: Yes. This is very good. I look  
10 at the old version of that. It's one sentence, very  
11 short. The new one is two sentences, also very short.  
12 Both are pretty good. I'm especially very happy with  
13 the second sentence, reduce the lengthy conversation  
14 to a very small concise wording. It's quite  
15 appropriate, and it's good.

16 DR. MUTMANSKY: Okay. Tom, can you work  
17 with those suggestions with Jim?

18 MR. MUCHO: Yes. I don't have a problem  
19 with the paragraph and we'll work a couple paragraphs  
20 around.

21 DR. MUTMANSKY: All right. Good. I'm happy  
22 with it. I thought we needed some additional  
23 discussion, and I'm happy with the additional  
24 discussion as described by Jim and so forth, and, Tom,  
25 if you could work with that, that's great. Okay. At

1 this point, I would like to get the approval that we  
2 are happy with the discussion section on operator  
3 training certification, and if we are, I would  
4 recommend that we get concurrence.

5           Is everybody okay with that? I see that  
6 everybody is okay with that. I would recommend that  
7 at this point in time we go to lunch. Jerry and I  
8 will be working on the order of presentation of the  
9 recommendations in the report over lunch, and I  
10 recommend that we get back at 1:30 to begin our  
11 discussions of the remaining discussion sections and  
12 that we try to get our work done as quickly as  
13 possible this afternoon so that our discussion  
14 sections have all been processed through the panel.

15           Is 1:30 an acceptable time for everybody?  
16 Okay. Thank you. We will go to lunch. Jim, do you  
17 have a point? Thank you. We will go to lunch at this  
18 point in time.

19           (Whereupon, at 12:10 p.m., the meeting in  
20 the above-entitled matter was recessed, to reconvene  
21 at 1:30 p.m. this same day, Wednesday, September 19,  
22 2007.)

23 //

24 //

25 //



1 sections to surface."

2           Here there are two things that I want to  
3 highlight. We are talking about integrity of the  
4 escapeway. That means two things. This escapeway  
5 should be isolated from other airways. Isolated means  
6 to install stoppings that are, if possible, air tight,  
7 and the other thing is the type of ventilation of  
8 those escapeways, and what we are suggesting is these  
9 airways, this escapeway should be ventilated with  
10 intake air as much as possible.

11           Now, those are the two issues that I would  
12 like to have highlighted here to guess the other  
13 issues that I have here. Maybe we need to reword and  
14 summarize the like that we don't need to be very  
15 specific. Jürgen would say what I have here is very  
16 prescriptive and maybe we need to remove that part.

17           DR. MUTMANSKY: Yes, I agree, Felipe. It  
18 would be helpful, and the other members of the panel  
19 would probably more readily just accept the words if  
20 it were done in that fashion, yes.

21           DR. CALIZAYA: Now, just before I continue  
22 with the next section, I would like to ask that maybe  
23 Bill can explain this a little bit more about the  
24 escapeway itself. The way how it's written in the  
25 regulations, we have two primarily and secondary

1 escapeways, they should be clearly marked. That's  
2 what the law says, and if it's clearly marked, that  
3 means we cannot just go to any door.

4           We need to go through the doors that are  
5 marked in the escapeway if I'm not mistaken, and again  
6 if we go by that, do we need to also look about the  
7 dimensions of doors or whatever is in that escapeway,  
8 and according to the regulations, we have this minimum  
9 requirement of four feet for that door.

10           MR. FRANCCART: Typically, the primary  
11 escapeway wouldn't travel through any doors. That's  
12 an isolated intake escapeway that runs from the  
13 section to the surface. You do have some instances  
14 where an alternate escapeway would possibly go through  
15 doors. I think the intention was the marked doors  
16 that provide access from the primary escapeway to the  
17 alternate escapeway to the alternate escapeway or an  
18 adjacent entry.

19           Those doors would be typically man doors,  
20 36-inch doors or smaller man doors, not the equipment  
21 doors that you're talking about. Those doors have to  
22 be marked if it's a door between the escapeway and an  
23 alternate entry. They have to have a mark within the  
24 entry that you can actually see where you're traveling  
25 in the escapeway. This shows that there's a door in

1 the cross-cut. Does that answer your question?

2 DR. CALIZAYA: Yes. In light of that, I  
3 think the doors that are close to the main fans, if  
4 the fans are high pressure and they need to be double  
5 doors or air-lock doors. Is that a reasonable  
6 amendment or correction or recommendation here?

7 MR. FRANCAERT: That's really up to the panel  
8 to make that decision.

9 DR. CALIZAYA: Okay. That was one of the  
10 reasons why I said we need to have air-lock doors, and  
11 I mentioned two-inch pressure on both. They need air-  
12 lock doors. Why I'm telling you this is because we  
13 had several cases where people lost their fingers or  
14 toes because of this high-pressure, trying to open it  
15 and suddenly you release that, and you're going to get  
16 your fingers or toes now.

17 That one is not a problem when it's less  
18 than one inch or even two inches, depending on the  
19 size of that man door, but when we are talking about  
20 two, three, five inches, I wouldn't be comfortable  
21 going through single doors. I would prefer to have  
22 those air-lock doors.

23 DR. MUTMANSKY: I have a question I guess.  
24 Bill, is there any established regulations that  
25 pertain to how many inches water gauge is acceptable

1 on a doorway?

2 MR. FRANCCART: There's nothing in the CFR  
3 that requires an air lock to be installed, but there  
4 are instances where inspectors have cited doors for  
5 not having an air lock because of high pressure. I  
6 don't know that there's any protocol on what that  
7 pressure would be within our inspection guidelines.

8 MR. MUCHO: Yes. Again, earlier comment,  
9 you wouldn't talk about it in terms of pressure. You  
10 would talk about it in terms of pounds force, which  
11 considers both the pressure and the size of whatever  
12 it is you're talking about, so it would be a certain  
13 pounds force that would be the criteria. Felipe here  
14 has 166 pounds in that calculation he did, which  
15 sounds kind of reasonable.

16 Jürgen's comment about being prescriptive is  
17 one I have also. That might be a good number. It  
18 sounds like pushing up against 166 pounds might be  
19 somewhere in the ballpark of where we're at, but I  
20 would think really somebody needs to look at that and  
21 decide what is the maximum force somebody should or  
22 could be working against to open a door, so to  
23 prescribe anything directly in terms of terms a number  
24 at this point, I don't think we can do it.

25 I've opened full doors like that that you

1 walk through with nine inches of pressure using a bar  
2 to get into a fan, so I mean it just depends on the  
3 situation that we're talking about. I think we can't  
4 prescribe a number at this point. We can make the  
5 recommendation I think that somebody ought to look at  
6 that and find out what that magic number is and maybe  
7 look at it. I think that's very valid. I've tumbled  
8 through a few man doors that I wish there was an air  
9 lock to.

10 DR. MUTMANSKY: Yes, I think most mining  
11 companies do have air locks at the prime locations in  
12 the mine where it's convenient for people. The real  
13 problem is since there's no standard, you actually  
14 might want to put an advisory number in there. I  
15 don't know what the right number is. Felipe did make  
16 mention of the fact that when you're opening a door,  
17 the hinges will bear half of the force necessary.

18 Of course, once the door is opened, then the  
19 forces are not active, and the forces don't come into  
20 play again until the door is starting to close. I  
21 think the biggest problem is the door is liable to  
22 slam shut, and that is a safety hazard to some extent.  
23 I'm not certain we've been asked to address that  
24 safety standard, but nonetheless, it is somewhat of a  
25 problem.

1           Would people object if Felipe put in his  
2 numbers as an advisory issue?

3           MR. MUCHO: I think citing it as an example,  
4 we on examination found these issues at these levels?

5           DR. MUTMANSKY: Yes.

6           MR. MUCHO: I don't think so. I don't see  
7 it as a problem.

8           DR. MUTMANSKY: Okay. All right. Jerry?

9           DR. TIEN: Yes. Along the line of that,  
10 should we also prescribe how the doors should be  
11 installed? Sometimes they're opposite to the pressure  
12 side, so you could cause leakage. Would you like to  
13 increase that is what I'm talking about finding.

14          MR. MUCHO: I know I've seen it.

15          DR. TIEN: While we are at a discussion, I'm  
16 just curious as a question.

17          DR. MUTMANSKY: Well, it's a very  
18 interesting point. Earlier in our discussions, maybe  
19 yesterday when we were discussing this, I was thinking  
20 about you wouldn't always know where the high pressure  
21 side was going to be throughout the lifetime of the  
22 mine. You may install the door, and it's not properly  
23 installed such that the door is always on the high  
24 pressure side, so you may have some problems.

25          MR. MUCHO: It actually occurs quite a bit.

1 When you take a longwall gate route, when you're on  
2 development, entry system No. 3 is on return, a lot of  
3 people put that on intake pressure and high-intake  
4 pressure, so those doors are backwards, so somebody  
5 has to go through, reinstall all the doors. Take them  
6 out and install them. That happens fairly often.

7 DR. MUTMANSKY: Fairly often, yes. Jerry?

8 DR. TIEN: Also on the same line, I think  
9 Tom will appreciate that those, who are in the field,  
10 that it's oftentimes the doors are being gapped. You  
11 have the door. You know the door is there, but it's  
12 on the other side of the gap. You couldn't get to it,  
13 so along that line I don't know it should be  
14 appropriate to have some recommendation and make sure  
15 a door would be acceptable.

16 MR. MUCHO: I'll ask Bill this question. Is  
17 there a regulation that addressed that because we do  
18 see it?

19 DR. TIEN: I doubt it.

20 MR. FRAN CART: I don't know if it's  
21 specifically stated in the CFR in that way. I don't  
22 believe it is.

23 DR. MUTMANSKY: Would an inspector normally  
24 address that kind of a problem in his inspections?

25 MR. FRAN CART: If a door is not accessible,

1 I would expect that he would.

2 MR. MUCHO: It gets a little tricky. I mean  
3 often things scoop, clean up. You've got this  
4 triangle, that technically, you can crawl over and  
5 around on one of the corners. Yes.

6 DR. MUTMANSKY: Okay. Yes. Go ahead,  
7 Jerry.

8 DR. TIEN: Felipe yesterday mentioned the  
9 size of the door for escapeway ought to be large  
10 enough to accommodate a stretcher going through, four  
11 by something. How does that tie to the escapeway  
12 without going through the doors?

13 MR. MUCHO: Help Mike out a little bit here.  
14 That is provided for in the regulations.

15 DR. TIEN: Yes.

16 MR. MUCHO: The height and width clearance  
17 on escapeways and through doors and so on is provided  
18 for in the current regulations.

19 MR. KALICH: This 75.380 spells out the  
20 requirements for the escapeways and what size the  
21 escapeway has to be maintained and things of that  
22 nature. Normally, you wouldn't expect to have a door  
23 in the primary intake escapeway, but there are  
24 possible times. Of course, you may have a regulator  
25 in it, and they need to be able to pass through a door

1 or a set of man doors, so there may be cases where  
2 you'd have a door in the intake escapeway, but  
3 normally you wouldn't find that.

4 DR. TIEN: So that, to kind of come back to  
5 Felipe's earlier comments or questions, should be mark  
6 the closest door or mark the door that is big enough  
7 to be in compliance with the regulation. Remember the  
8 earlier discussion?

9 DR. MUTMANSKY: Well, do we have to since  
10 it's already in the regulation? I'm not certain we  
11 have to do that, do we?

12 DR. TIEN: When we were talking about  
13 lifelines, we also mentioned these three cases where  
14 we need to have those tactile signs, and one was the  
15 accessibility to doors, and I'm assuming that those  
16 doors are the escapeway doors, not any door, and those  
17 escape doors are maintained. They are checked  
18 regularly, and they are of the right dimension so that  
19 it passes this stretcher test.

20 MR. MUCHO: Those doors, as Mike just  
21 pointed out, are very few and far between. You might  
22 find them around shafts depending on how you're  
23 running the air around shafts. They are properly  
24 sized. I thought we were talking about the man doors  
25 that occur along the entry itself being marked and so

1 forth.

2 DR. TIEN: Yes, I guess. To put it nicely,  
3 if you have two doors, one just next to it, which is  
4 two by two, and there is another five crosscuts down,  
5 is appropriate size specified by the regulation, which  
6 door shall we mark on the lifeline?

7 MR. MUCHO: We'll mark them both.

8 DR. MUTMANSKY: Both.

9 MR. MUCHO: We'll mark all doors. The point  
10 was we come down out of there escaping, and if we're  
11 in a situation where we wanted to check whether we're  
12 in the best entry, we want to know where those doors  
13 are so that we can at least check to see if there's a  
14 better entry. The Aracoma guys are coming down and  
15 jumped into the belt line through a known door to that  
16 particular section as far as I can recall, but that's  
17 what we want. Any door. The door along the escapeway  
18 will pass the stretcher test.

19 DR. TIEN: Okay. Felipe, is that what you  
20 had in mind, or I thought you were specifically only  
21 marking the escape doors?

22 DR. CALIZAYA: That's what the escape door  
23 is, right? We are not talking about the equipment  
24 doors. Equipment door is something else.

25 DR. MUTMANSKY: Jerry, we meant that to mean

1 any door. At Aracoma, that was not an escapeway.  
2 That was just a door between the belt entry on one  
3 side and the escapeway from that mining section on the  
4 other side. Some of the people at Aracoma knew there  
5 was a door there because they had installed it, and  
6 they were searching for that door after their SCSRs  
7 were on, and unfortunately only a portion of them made  
8 it to the door.

9 DR. CALIZAYA: Yes, yes.

10 DR. MUTMANSKY: Okay. Well, we need to help  
11 Felipe. We still need to help him structure his  
12 section on discussion of escapeways and leakage.  
13 There's going to be a considerable amount of work in  
14 taking out the prescribed materials here.

15 How about if we request that Felipe put  
16 together a two-page discussion or whatever is an  
17 appropriate length that discusses first general  
18 aspects of escapeways, general aspects of leakage  
19 without going into great detail in prescribing exactly  
20 what is necessary and allow the regulations to dictate  
21 that part of the issue? Felipe, would you be  
22 comfortable doing that?

23 DR. CALIZAYA: I would be happy to do that,  
24 but I would like to have that number mentioned maybe  
25 in terms of force, not in terms of pressure.

1           MR. MUCHO:  What I'm saying by that, that's  
2 a mini research project.  Somebody needs to take a  
3 selection of miners and so on and see who can open  
4 doors against what force and what that number should  
5 be, assuming someone wants to move forward with then  
6 requiring air locks beyond situations that exceed that  
7 force.

8           DR. MUTMANSKY:  Well, I'm somewhat surprised  
9 there is no standard for that, whether in the  
10 regulations or in some other area.  You would think  
11 people have looked at this before I would guess.  Yes.  
12 Go ahead, Mike.  Do you have a thought?  All right.  
13 Jerry?

14          DR. TIEN:  Yes.  I'm just wondering are  
15 there state regulations addressing that issue because  
16 I know some states, like in Kentucky, they specify how  
17 often the spacing of the doors for a certain code  
18 height.  Is there something?

19          MR. MUCHO:  Well, that's the doors along the  
20 escapeway.

21          DR. TIEN:  Yes, along the escapeway.

22          MR. MUCHO:  Yes, federal regulations also  
23 address those.

24          MR. KALICH:  75.380 addresses that.

25          DR. TIEN:  Okay.  The spacing?

1 MR. MUCHO: Yes.

2 MR. KALICH: Yes.

3 DR. TIEN: Okay.

4 MR. MUCHO: Yes, those doors. It makes them  
5 two doors back and forth.

6 DR. MUTMANSKY: Okay. Tom, it appears as  
7 though any possible disagreement I hear may come  
8 between you and Felipe here.

9 MR. MUCHO: And Jürgen.

10 DR. MUTMANSKY: And Jürgen? Felipe, would  
11 you be willing to work through the wording with Tom  
12 and Jürgen on this one?

13 DR. CALIZAYA: I think it's okay.

14 MR. MUCHO: Yes, and I don't see a problem.  
15 I think we'll figure that all out.

16 DR. MUTMANSKY: Okay. The rest of the panel  
17 will weigh in if necessary, but I think basically that  
18 this can be accommodated, and I'll leave the  
19 assignment up to Felipe to complete the wording and  
20 share it with Tom and Jürgen, and once everybody  
21 agrees, we can share it with the whole panel just to  
22 make certain that people are okay with that. Jim?

23 DR. WEEKS: Well, one thing I think this  
24 recommendation needs also is some discussion of why  
25 this is an issue in using belt air for ventilation.

1 DR. MUTMANSKY: Okay.

2 MR. MUCHO: That's the issue of opening the  
3 doors? Is that the issue?

4 DR. WEEKS: I don't know. You tell me.

5 DR. MUTMANSKY: You mean escapeways and  
6 leakage, how that relates to --

7 DR. WEEKS: Yes. Right.

8 DR. TIEN: It's tied to these.

9 DR. WEEKS: Yes, why is this an issue for  
10 this panel and for belt ventilation in general?

11 DR. TIEN: It's an important topic.

12 DR. CALIZAYA: The main reason is this. We  
13 are talking about isolating the primary escapeways and  
14 the alternate escapeways. You will have at one point  
15 doors. You need to go from alternate escapeway to  
16 primary escapeway, and they are separated by means of  
17 these doors, and if these doors are cut out or high  
18 pressure, then we won't be able to open them. We are  
19 stuck there, or if we try to force it, Tom was saying  
20 using steel or something like that, we have a chance  
21 to get injured. That's the problem.

22 DR. TIEN: Well, you may not have the steel  
23 to open the doorways.

24 MALE VOICE: Yes.

25 DR. WEEKS: I mean, I just think that some

1 discussion to that effect should be explaining why  
2 this is an issue.

3 DR. CALIZAYA: Yes. Good idea.

4 DR. WEEKS: Why are we making this  
5 recommendation?

6 MR. MUCHO: In general, the integrity of the  
7 escapeways I think is very intimately tied to belt  
8 air. I mean, from early on I mean, that's one of the  
9 main things we wanted to do is when you're looking at  
10 belt air, you want to sit and look at possible  
11 scenarios of escape and so on.

12 Fire hazard is in the primary, not being in  
13 the primary so that you can almost be assured that if  
14 a fire occurs in the belt entry, I'm almost assured  
15 I'm coming out on an escapeway that's at a higher  
16 pressure and not going to have a problem.

17 DR. WEEKS: Well, I mean, this report is  
18 going to go to Congress, and there's going to be some  
19 Congress staffperson who knows next to nothing  
20 compared to what is known on this panel about mining,  
21 so we shouldn't assume that the connection between  
22 this and escapeways and belt air is self-evident. I  
23 don't think we need a long elaborate explanation, but  
24 just saying this is why it's a problem. This is the  
25 solution.

1 MR. MUCHO: Sounds like you got another  
2 assignment there, Felipe.

3 DR. MUTMANSKY: Felipe, can you handle that?  
4 Would you like Jim to help you at all?

5 DR. WEEKS: I don't know the answer myself.  
6 I mean, I have a feel for it, but I can't say that I  
7 know --

8 MR. MUCHO: If Felipe has a go at it, Jürgen  
9 and I will comply.

10 DR. MUTMANSKY: Okay. That's fine.

11 DR. WEEKS: Just imagine who's going to read  
12 the report.

13 DR. MUTMANSKY: Right. Good point.

14 DR. TIEN: Good point. Jan?

15 DR. MUTMANSKY: Yes, Jerry?

16 DR. TIEN: Well, there are three words in  
17 the title escapeways and leakage. We spent a lot of  
18 time discussing something, which does not appear at  
19 the doors. Should we also address the discussion on  
20 leakage?

21 DR. WEEKS: You mean on doors?

22 DR. TIEN: Well, leakage. We talk a lot  
23 about doors, which we're aware to.

24 DR. CALIZAYA: Regarding leakage, we have  
25 some more in a few minutes.

1 DR. TIEN: Okay.

2 DR. CALIZAYA: But I will like to clarify  
3 about these doors. Doors is really part of the  
4 escapeway as Tom was telling us. It's part of the  
5 system, and we are concerned about the safety of that.  
6 I agree with Jim. We will make it as short as  
7 possible and maybe in two paragraphs we could say what  
8 the problem is and what the possible solutions are.

9 DR. MUTMANSKY: Thank you, Felipe. Mike  
10 Kalich has another comment he'd like to make.

11 MR. KALICH: As far as the issue of being  
12 able to open a door or pass through a door,  
13 75.380(d)(1) states that "Each escapeway shall be  
14 maintained in a safe condition to always assure  
15 passage of anyone, including disabled persons," so as  
16 an inspector if you are unable to open a door because  
17 of pressure, the inspector would require that some  
18 action be taken whether it would be a set of air lock  
19 doors or some means to assure passage because in that  
20 case it would not meet the current requirements.

21 MR. MUCHO: The issue we're getting into  
22 here is that as I travel that escapeway, those are  
23 doors in the escapeways. I travel to it. I can have  
24 adjacent entries on either side that I may want to get  
25 into, and there might be a big pressure difference.

1 For example, if I'm traveling down the primary  
2 escapeway, Jim Walter, and there's a door into the  
3 return, do you know what that pressure differential is  
4 going to be?

5           It's going to be tremendous, and I don't  
6 think that we can start talking about air locks at  
7 every one of those doors along that escapeway. I  
8 mean, that's way out there.

9           DR. TIEN: Impractical.

10           MR. MUCHO: I don't know what to say, but we  
11 are confusing those two sets of doors as we're talking  
12 here.

13           DR. MUTMANSKY: That's a good point.  
14 Whether you could actually require air locks on all  
15 those would really be difficult.

16           MR. MUCHO: That's what I tumbled through in  
17 half a cross-cut work a couple times.

18           DR. MUTMANSKY: Good point. Well, I  
19 personally think we need to move forward, and I think  
20 we need to allow Felipe some freedom to make the first  
21 rewrite of the discussion for escapeways and leakage.  
22 Then have interaction from Tom and Jürgen, and, if  
23 necessary, from the rest of us before we approve that  
24 discussion section.

25           I believe that there's plenty of material to

1 work with here, and if Tom and Jürgen are okay with  
2 it, we can move forward in that fashion. Anybody have  
3 any other comments before we leave this particular  
4 issue of escapeways and leakage?

5 DR. CALIZAYA: The second point about the  
6 escapeway was to ventilate this using intake air as  
7 much as we can on our own terms, and the reason for  
8 that I think I have two paragraphs about that, and it  
9 has to do with firefighting. When escapeways are on  
10 the intake side, we have some advantage. That's one  
11 point, and the other thing is when we have those  
12 escapeways ventilated with clean air or fresh air,  
13 then the possibility of leakage will be high pressure.

14 Therefore, leakage will be from escapeway to  
15 other entries, and what I would do is just keep those  
16 comments that we will review.

17 DR. MUTMANSKY: Yes, I think those are  
18 appropriate comments, and I was just reading them here  
19 as you were discussion them, and I think it's  
20 worthwhile to put that in the discussion section.  
21 Okay. Any other further comments about escapeways and  
22 leakage? Okay. We still have some work to do there,  
23 and since Felipe has taken on this chore, give him an  
24 extra day to complete this.

25 It turns out that September 30 is on a

1 Sunday, so we'll give him until Monday, October 1, to  
2 complete it, and you get an extra day, Felipe.

3 DR. CALIZAYA: Okay.

4 DR. MUTMANSKY: We next want to consider air  
5 velocities, and Felipe again is going to introduce --

6 DR. WEEKS: What about the rest of us? Do  
7 we get extra days to?

8 DR. MUTMANSKY: I will consider that, Jim,  
9 at the appropriate time. Felipe, would you go ahead  
10 with the discussion on the air velocity and give us  
11 just your basic thoughts about the discussion section?

12 DR. CALIZAYA: All right. We have two  
13 numbers there. One is 100 feet per minute for a  
14 minimum air velocity, and 1,000 for maximum air  
15 velocity, and the supporting document for the lower  
16 end it has to do with the transport of the combustion  
17 products and carbon monoxide to that same source, and  
18 I think yesterday we spent some time in discussing  
19 this issue, and the discussion that they had it just  
20 supports that, and I have a couple of references.

21 Talking about the upper limit, 1,000.  
22 Again, here we have another problem. When the air  
23 velocity is above 800 really it starts, when the  
24 entrainment takes place, entrainment of float dust and  
25 respirable dust into the air stream, and once that one

1 is in the air stream, it's difficult to dilute or to  
2 control, so that was the reason for the upper limit.  
3 In addition to that, we have other factors that will  
4 take place here.

5            Depending on where you are, if you are in a  
6 cold climate, then you will see the chill factor. If  
7 you are other areas, you may have other air  
8 contaminants. Then this 1,000, it will help you to  
9 some degree, and the other thing, when it's 1,000, I  
10 think when we're at Jim Walter, when we were going  
11 from one crosscut to another, we had to go through an  
12 overcast, and that overcast I'm sure that panel  
13 members who went there were able to appreciate the  
14 effect of 1,000 feet.

15            That velocity was above 1,000, and I  
16 remember I think one of our peer members was about to  
17 lose his helmet, and some of you I think you went  
18 through that experience, so that's the reasoning for  
19 the upper limit.

20            DR. MUTMANSKY: Okay. Felipe, I think you  
21 have about four different references there. I think  
22 you may have to supply copies of those references to  
23 the staff, if necessary. I know the first one,  
24 Barclay & Leach, you do have to supply, and there may  
25 be others there, too.

1 DR. CALIZAYA: Okay.

2 DR. MUTMANSKY: Okay. Any comments on the  
3 discussion section on minimum and maximum air  
4 velocities?

5 DR. TIEN: I think we pretty much summarized  
6 what we discussed yesterday because you can get as  
7 complicated as you want to be.

8 DR. MUTMANSKY: Yes.

9 DR. TIEN: And the only comment that I have  
10 throughout the 20 recommendations, this is the only  
11 one that had bolded velocities, minimum and the  
12 maximum. Would that be okay, do you want to be  
13 consistent, or it's critical?

14 DR. MUTMANSKY: Okay. Jerry, I'm not  
15 exactly --

16 DR. TIEN: The minimum air velocity is bold  
17 in both letters.

18 DR. MUTMANSKY: In bold?

19 DR. TIEN: Yes.

20 DR. MUTMANSKY: Okay. Good. I'm not  
21 certain that makes any difference, but we can.

22 DR. TIEN: For the matter of consistency.

23 DR. MUTMANSKY: For a matter of consistency.  
24 Right. For a matter of consistency, Jerry is saying  
25 let us consider whether we take the bold printout of

1 those. I'm okay with that, Jerry.

2 DR. TIEN: I don't know if the rest of the  
3 panel --

4 MR. MUCHO: I'm okay.

5 DR. WEEKS: That's fine.

6 DR. MUTMANSKY: We're all okay with that,  
7 Jerry. We will change that. That does not constitute  
8 a change to the recommendation at all.

9 DR. TIEN: Okay.

10 DR. MUTMANSKY: All right. We're in good  
11 shape then. Any other comments?

12 DR. WEEKS: I just think in the discussion  
13 section we need to mention also that if the air  
14 velocity increases, it impairs the AMS system by  
15 diluting the carbon monoxide and that that's a  
16 problem. It's dealt with in the regulations, but I  
17 just think we need to acknowledge that preliminary  
18 factor on the upper velocity.

19 DR. TIEN: Definitely, that will do some  
20 changes.

21 DR. WEEKS: Okay.

22 DR. MUTMANSKY: Okay. I think it's  
23 reasonable to make note of that in the discussion  
24 section.

25 DR. TIEN: Definitely.

1 DR. MUTMANSKY: Okay. Any other comments  
2 about minimum and maximum air velocities? Okay. We  
3 move on to the next recommendation, and the next  
4 recommendation is Point-feeding I believe, and we can  
5 begin by just simply saying that the discussion as  
6 constituted now talks a little bit about the point-  
7 feeding procedure, discusses some of the testimony  
8 give by Fred Kissel at the Pittsburgh meeting.

9 In particular, he was referring to fatal  
10 events involving mine fires where certain features or  
11 characteristics that were common in these events are  
12 detailed in some of his papers on escape in mine  
13 fires, and some of those features are generally being  
14 addressed by other MSHA actions during the last year  
15 and have been to a great extent those features have  
16 been mitigated through better control of certain  
17 aspects of the mine environment.

18 Several of them however have not been  
19 addressed, and we have pointed the finger at point-  
20 feeding as one thing that could perhaps be improved,  
21 and we have addressed that in the recommendation. I  
22 believe that in most cases, we presented a pretty  
23 reasonable rationale in the discussion section.  
24 However, we made considerable changes in the point-  
25 feeding recommendation. Therefore, we may want to

1 address additional issues in the discussion section as  
2 well.

3 I think the biggest aspect about this is we  
4 had recommended that there be some sort of sensors  
5 placed out by the point-feed regulator and that there  
6 be some additional technology applied to the closing  
7 of the point-feeding regulator. If anybody feels as  
8 though we need to address that issue in the discussion  
9 section, then we should take that up at this point in  
10 time.

11 I think the only thing I could see is that  
12 maybe this one needs to be carefully read. I can do  
13 that if you'd like. I can carefully read it to make  
14 certain that the language does not reflect the old  
15 form of the recommendation and instead reflects the  
16 revised form of the recommendation.

17 MR. MUCHO: Yes. Conceptually, it shouldn't  
18 be very much different. We've got some changes into  
19 the mechanics.

20 DR. MUTMANSKY: That's right. Yes, that's  
21 correct. Any other comments about that? Does anybody  
22 see anything in the discussion section that I should  
23 pay attention to or that I should revise in my --

24 DR. TIEN: I think you're fine.

25 DR. MUTMANSKY: Okay. I will make this my

1 job to read this carefully and make certain that the  
2 language is in agreement with the second  
3 recommendation that we put forth, okay?

4 DR. TIEN: Is it possible to break this  
5 long, one-page narration to two or three paragraphs?

6 DR. WEEKS: Where would you break it?

7 DR. TIEN: Somewhere in the middle we  
8 propose would be a good start.

9 DR. MUTMANSKY: Jerry, you had brought that  
10 up earlier, and somehow we got sidetracked onto other  
11 issues, and the only thing that I could see is that  
12 there was not a perfect place to break the paragraph  
13 up into two paragraphs.

14 MR. MUCHO: I think the only place I saw was  
15 after emergency situations. That states the case, and  
16 then from there on you're going to how you're going to  
17 deal with it.

18 DR. TIEN: Yes, because I'm concerned if  
19 it's too long, you lose it. By the time you read at  
20 the bottom, you already forgot about what you read in  
21 the beginning.

22 DR. MUTMANSKY: I prefer it not broken  
23 myself, but I don't have a strong feeling, and I don't  
24 think we need to revote. If you decide we may want two  
25 paragraphs here, and everybody else is in agreement, I

1 think we can break it up without it being a votable  
2 change, but I could be wrong there.

3 DR. WEEKS: If you broke it at that point,  
4 it would highlight what we're recommending, which is  
5 two CO sensors, et cetera.

6 DR. TIEN: Right. Yes.

7 DR. WEEKS: It would make it easier for  
8 somebody to say well, what do you think we should do?  
9 That's where it starts to explain. That would be the  
10 reasonable place I think to break it.

11 DR. MUTMANSKY: Yes, it gets specific at  
12 that point. Are you in agreement with Jerry on that?

13 DR. WEEKS: Yes.

14 DR. MUTMANSKY: You are? Okay. Well, it  
15 appears as though the chairman will be overruled by  
16 others who are in perfect unanimity, and, Tom, you  
17 agree?

18 MR. MUCHO: Yes, I think that's okay.

19 DR. MUTMANSKY: Felipe, are you in  
20 agreement? I dare not vote no on this. I vote yes on  
21 this, and I think Jürgen votes yes, too?

22 MR. MUCHO: Yes, he does. Yes, he does.

23 DR. MUTMANSKY: Okay. Good. Thank you.

24 DR. CALIZAYA: Jan?

25 DR. MUTMANSKY: Yes?

1 DR. CALIZAYA: Maybe when you are discussing  
2 this justify the 1,000 feet spacing between the two  
3 sensors. There may be cases when you don't have room  
4 for that.

5 DR. MUTMANSKY: That's correct.

6 MR. MUCHO: Yes, that's how he said that,  
7 1,000 feet if available and so forth. We talked about  
8 the Jim Walter with the 150 feet from the shaft.

9 DR. WEEKS: What's the spacing now in the  
10 belt entry?

11 MR. MUCHO: Well, that's the justification  
12 for the 1,000 feet. That's the normal maximum  
13 spacing.

14 DR. WEEKS: I see. I think that's  
15 sufficient.

16 MR. MUCHO: But Felipe is also mentioning  
17 really that you may only need one, so Jan can handle  
18 that.

19 DR. MUTMANSKY: Well, actually no. I think  
20 I may take a vote because let us look at it this way.  
21 I can explain that in the section, but I think you  
22 still need to CO sensors because one CO sensor may  
23 have a defect. I mean, it may need calibration, and  
24 the other one may be specifying the correct CO  
25 reading, so we may still need two.

1 DR. CALIZAYA: Yes, if we do this.

2 DR. WEEKS: If you want to get into issues,  
3 I'll tell you one more. When you put a CO sensor near  
4 the bottom of an intake shaft such as the Jim Walter  
5 situation, you find that you record all the field  
6 fires in the area or any other burning trash that goes  
7 on.

8 In fact, any CO sensor in fairly close  
9 proximity off the intake shaft bottom will pick that  
10 up, so hopefully there's no houses around who  
11 regularly burn trash or whatever, and hopefully  
12 there's not any pit fires, but you're going to get  
13 that kind of a complication. That particular kind of  
14 an issue has a couple of issues to it.

15 DR. MUTMANSKY: Yes. There's another one  
16 I'll tell you about. The parking lot. If it's too  
17 close to the intake shaft, occasionally it can cause  
18 some problems as well.

19 DR. WEEKS: That's correct. Yes. We used  
20 to pick them up really on sensors that were fairly  
21 remote from the shaft bottom, and like that case, you  
22 start putting them right at the shaft bottom, you're  
23 going to pick up any CO activity in any of these  
24 fairly large areas.

25 DR. MUTMANSKY: I'm assuming you're not

1 recommending we get into that to any degree at this  
2 point in time.

3 MR. MUCHO: Well, no. That kind of detail  
4 has a time and place.

5 DR. MUTMANSKY: Okay. All right. Where are  
6 we on this? Do we need more discussion of what needs  
7 to go into the discussion section?

8 MR. MUCHO: I thought you said when we  
9 talked about this 1,000 feet, there might be some  
10 situations that might want to bring them in tighter?  
11 You might not have 1,000 feet for some other reason.  
12 Do I recall that?

13 DR. MUTMANSKY: I think we do need a  
14 paragraph on that. Okay. I will take the  
15 responsibility for producing the paragraph that gives  
16 our thoughts on that, and I will try to get that to  
17 members of the panel for approval in fairly short  
18 order. I will give myself until Monday, October 1 to  
19 do that. Any other points on this one? Okay. I  
20 think the next recommendation is titled Research.

21 We changed the research recommendation  
22 considerably, but we kept most of the same concepts in  
23 the research recommendation and then added the use of  
24 booster fans in underground coal mining operations as  
25 an additional research topic that might merit

1 consideration. Now, again in this particular case the  
2 discussion section was written pretty much to the  
3 previous form of the recommendation.

4 I think we need to carefully read it over  
5 again to make the discussion section match the changes  
6 in the recommendation that we've come forth with, so I  
7 think I should probably again take the responsibility  
8 for rewriting this and probably just simply pass it by  
9 the other members of the panel. Any thoughts about  
10 that in this particular case?

11 DR. WEEKS: Well, as before I think some  
12 discussion about why is this an issue for the belt air  
13 panel would be useful.

14 DR. MUTMANSKY: All right. So we want some  
15 sort of a relationship. We want some sort of  
16 relationship with belt air as a necessary part of the  
17 discussion.

18 DR. WEEKS: Yes.

19 DR. MUTMANSKY: Okay. I'm making note of  
20 that, Jim. Anything else that we should address in  
21 the discussion section, and I will take the first stab  
22 at this and make certain that everybody has a chance  
23 to read that over, and I'll try to get that to Linda  
24 by October 1 as well. Okay. Can we move to the next  
25 one? We still have three more recommendations. I'd

1 like to take a moment to review what else we have left  
2 this afternoon.

3           We have three more recommendations on which  
4 we will look at the discussion section. I have some  
5 references that I would like to have people provide to  
6 Debra Janes, and one other thing that we want to cover  
7 is the revised order of the recommendations and the  
8 final report, so if we can get through with those  
9 three things afternoon, we'll have accomplished an  
10 awful lot. What is the current one we're discussing  
11 here? Dust.

12           The dust recommendation was one that I put  
13 together. In this particular case, I don't think we  
14 need a lot of changes to the respirable dust  
15 recommendation, so the discuss section more or less  
16 reviews some of the data that was given to us by Mark  
17 Schultz at the Pittsburgh meeting I believe. It also  
18 discusses some of the issues that are discussed in the  
19 federal regulations that pertain to the percent of  
20 their moving down the belt airway and the percent of  
21 air that goes into the primary intake entry.

22           It also discusses some of the issues of what  
23 is the probability that dust in the belt airway will  
24 raise the belt concentrations in the working section  
25 itself, and the only reference given here is the

1 reference to Mark Schultz's comments to the panel in  
2 February of 2007, and so that more or less lays out  
3 what the discussion is in this particular section of  
4 the report. Are there any comments concerning  
5 anything that needs to be changed in that discussion  
6 section?

7 DR. WEEKS: Well, I'm going to take a look  
8 at it. I don't know that there's anything to change  
9 in it, but I'll take a look at it. I think also there  
10 was an equation presented to us in Pittsburgh showing  
11 sort of a weighted average.

12 DR. MUTMANSKY: Right. Yes.

13 DR. WEEKS: Including dust concentration and  
14 air volume and so on, how do you get to the final cut  
15 that I think presents a useful framework for talking  
16 about the issue.

17 DR. MUTMANSKY: Yes. That there was a paper  
18 by Bob Haney, and maybe that should be added. We  
19 should probably put in reference to Haney's work and  
20 provide the specific source of that equation. Would  
21 you like to see the equation at all?

22 DR. WEEKS: I think it would be useful to  
23 put it in there.

24 MR. MUCHO: I agree. That's a basic concept  
25 when we're talking belt air. If you recall, when we

1 first got into that, there was a lot of confusion or  
2 whatever. I think to keep emphasizing it applies of  
3 course to methane, any mixing problem, so it's very  
4 basic. I think it's good to keep that in there and  
5 put that in there.

6 DR. WEEKS: I do think that we should  
7 include the reference to Haney's work. Personally, I  
8 think it's one of the best in the whole field.

9 MR. MUCHO: I agree.

10 DR. MUTMANSKY: That shouldn't be a problem.  
11 I think that would be very easy to do. I'm familiar  
12 with it, and I have this reference, so we're in good  
13 shape. Okay. Any other comments regarding the dust  
14 recommendation? Okay. We move to gases and the gas  
15 recommendation.

16 MR. MUCHO: I just wanted to jump back on  
17 air velocity and methane layering. The recent NIOSH  
18 publication, *Methane Control in Mining Handbook*,  
19 edited by Dr. Kissel, has a good summary discussion of  
20 methane layering and things that could be done. It's  
21 a good summary that might be something that might want  
22 to be referenced in that discussion on methane  
23 layering.

24 DR. MUTMANSKY: Felipe, do you have that  
25 reference?

1 DR. CALIZAYA: Not this one. No reference.

2 DR. MUTMANSKY: Okay.

3 MR. MUCHO: Do you have it on that reference  
4 list?

5 DR. CALIZAYA: Yes, I have that one. I may  
6 add some more references there because I think in  
7 England during that time there were more than one  
8 author working on that. One was in the field, and the  
9 other one was in the lab.

10 DR. MUTMANSKY: Okay. All right. You'll  
11 put that in then?

12 DR. CALIZAYA: Yes.

13 DR. MUTMANSKY: Okay. Good. We're back to  
14 mine gases again. I'm sorry. It's now called mine  
15 methane. Incidentally, this was not changed greatly  
16 when we went through the discussion. When we went  
17 through decision making on this recommendation, there  
18 were minor changes, but the discussion section should  
19 pretty well apply to our final form of the  
20 recommendation.

21 We've made some discussion to informal  
22 references to gas problems at mines, and we primarily  
23 used information from MSHA personnel as the source of  
24 that data. There was also one very applicable study  
25 done by Robert Krog and three of his colleagues at

1 NIOSH, and that was presented in 2006. That reference  
2 is very important here primarily because it shows how  
3 the gas that is generated in the belt entry can effect  
4 the gas concentrations at the face.

5 I think the appropriate references are  
6 there. Is there any reason that we need to do any  
7 additional paragraphs or topics in that discussion?

8 MR. MUCHO: I see none.

9 DR. MUTMANSKY: Okay. Anybody else have any  
10 thoughts about that one? Okay. Let's move on the.  
11 The next one is the final recommendation on  
12 inspections. We had a long discussion on this  
13 recommendation, and I think the impetus for this  
14 inspection recommendation were some of the aspects of  
15 the report of investigation of the Aracoma Alma No. 1  
16 mine fire.

17 In that report, there were a number of  
18 different problems with the inspection procedures at  
19 Aracoma. The impetus essentially revolved around how  
20 do we help a mine inspector complete his inspection  
21 without overlooking serious problems that might exist  
22 in the mine atmosphere, and as you probably realize,  
23 almost all of the impetus came from the Aracoma  
24 incident, but we also had input on that from Bill  
25 Dupree and Bill Knepp about some of the problems of

1 trying to -- what was the right word we used?

2 I think the wording was I believe how do we  
3 institute structured procedures? I think that's the  
4 basic wording. We had a lot of discussions about  
5 that, and as it turns out, we are urging MSHA to try  
6 to provide more structure in their inspection  
7 procedures, and we are allowing them to do that in a  
8 number of different ways including some  
9 computerization and some other methods of providing  
10 structure.

11 Anybody have any comments about the  
12 discussion section in this particular one? I think  
13 it's pretty straightforward. Felipe?

14 DR. CALIZAYA: I think yesterday we talked  
15 about checklists, and I think that should be somewhat  
16 here, and also I would suggest to have this third eye  
17 during the inspection of the system. We are talking  
18 about a system, which is highly specialized. We have  
19 electrical units, we have partial play systems, we  
20 have monitors and so on, and one person or two  
21 probably not sufficient.

22 I would be inclined to have a third person,  
23 who could be from the mine, could be from MSHA or from  
24 somewhere else, but to have a team to conduct this  
25 inspection, and that team should follow that

1 checklist.

2 MR. MUCHO: Okay. That would probably  
3 constitute about six hearings across the country and  
4 probably about 150 speakers would end up addressing  
5 the issue and so on and so forth.

6 DR. MUTMANSKY: Right. Felipe may find that  
7 Congress will look at that. I'm not certain that we  
8 want to make that recommendation. What would it be?  
9 What would you call it? It would constitute somewhat  
10 of a serious problem for MSHA to do that.

11 MR. MUCHO: It would be a major change in  
12 the way things are done.

13 DR. WEEKS: It would be doubling the number  
14 of inspectors.

15 DR. MUTMANSKY: At least. Yes, at least.

16 DR. CALIZAYA: Not even a checklist?

17 MR. MUCHO: Well, the checklist thing, I  
18 like the checklist.

19 DR. WEEKS: I was looking to see. We didn't  
20 get that verbiage.

21 MALE VOICE: One person at a time.

22 DR. MUTMANSKY: The court reporter would  
23 like us to be orderly in our comments, and yes. Let's  
24 take them in order. Tom, go ahead. You can make your  
25 comment.

1           MR. MUCHO: The checklist comment is a good  
2 comment. I mean conceptually, that's sort of what we  
3 were talking about. I don't know again whether you  
4 want to get that prescriptive to say checklist.

5           DR. MUTMANSKY: Since this is mine, I'll try  
6 to work language in that allows for computerization or  
7 physical checklist of some sort, and I'll pass it by  
8 the panel, if necessary. If you'd like me to, I will,  
9 yes. I will assign that duty to myself. Jerry, you  
10 were going to say something?

11          DR. TIEN: Yes. Yesterday's discussion and  
12 today's were very helpful on various topics, all  
13 important, and if it turns out to be we'll narrow it  
14 down to the second sentence, that's what we're trying  
15 to do. Structure, procedure for all the things we're  
16 going to be talking about. Now, as I read it, the  
17 third sentence, "This recommendation is aimed at mines  
18 using the belt air in the working section but can be  
19 applied to any underground coal mines."

20           The more I read it, the more I don't know  
21 what that sentence will do for us. Should we use the  
22 word "should" be applied or "can" be applied?

23          DR. MUTMANSKY: It could mean either I  
24 guess. It's like a hint without being --

25          MR. MUCHO: Yes, it's a hint in case you

1 didn't think of it.

2 DR. TIEN: Okay.

3 DR. MUTMANSKY: Yes. Anybody else have  
4 comments about that specific sentence?

5 DR. WEEKS: Which sentence are we looking  
6 at?

7 DR. MUTMANSKY: The last one.

8 DR. WEEKS: The last one?

9 DR. TIEN: Should we use the word "can" or  
10 "should?" It could go either way.

11 MR. MUCHO: It's the same issue. We're  
12 dealing with belt air and belt air issues, and of  
13 course we again use Aracoma. It sure would have been  
14 nice if an inspector was looking and saying the air is  
15 traveling in its proper course, all the stoppings are  
16 in place, whatever. The belts are running properly or  
17 whatever for the belt air situation, but for us to  
18 step up to all mines obviously you start getting on  
19 thin ice.

20 DR. WEEKS: Yes. I think we ought to be  
21 fairly candid in the discussion section and again  
22 probably refer to Aracoma that there were some obvious  
23 deficiencies in the inspections that were conducted at  
24 that mine, and we ought to try and address those.

25 MR. MUCHO: That's in there, the Aracoma

1 reference.

2 DR. WEEKS: I think if we do something like  
3 recommend a checklist, we ought to do so as if we know  
4 what we're talking about and recognize that checklists  
5 are not perfect. The problem with them is that they  
6 become rote or inevitably there's something that's not  
7 on the checklist, and the person might just tend to  
8 ignore it if it's not on the checklist, so it's not a  
9 perfect solution. It's a step in the right direction.

10 MR. MUCHO: Part of the thinking was too,  
11 and inspectors travel to all sorts of mines, and there  
12 are some things that are of course specific to belt  
13 air mines under 350 and so forth, so how well does  
14 that inspector pick that up and be looking for those  
15 kinds of things or not, so again if I have a  
16 checklist, and I'm going to a belt air mine, then  
17 those things are there.

18 DR. WEEKS: Some people might say I've got a  
19 checklist. It's 30 CFR. What else can you do?

20 MR. MUCHO: I'm sure they do.

21 DR. TIEN: Well, either way is fine as long  
22 as you can address in the discussion section use a  
23 little bit more stronger, how shall I say, hint?

24 DR. MUTMANSKY: Yes. I think what you were  
25 asking for is to put a little bit more emphasis on

1 this in the discussion so that it becomes a strong  
2 hint.

3 DR. TIEN: Yes, instead of yes, okay, either  
4 one.

5 DR. MUTMANSKY: Sure.

6 DR. TIEN: That goes also with the  
7 computerization as I first thought, yes.

8 DR. MUTMANSKY: Yes. I think we can do  
9 that. I'll take responsibility. If the panel wants  
10 me to do that, I will do that. Okay. Any other  
11 discussion points on this recommendation? Okay.  
12 Thank you very much. We are at the end of our  
13 recommendations now. There are two other things we  
14 have yet to accomplish this afternoon. I hope to  
15 accomplish them soon, and we won't even have to take  
16 an afternoon break perhaps.

17 I have a list of about 15 references that  
18 Debra Janes would like to have, so she will be able to  
19 supply them to the proper people, if necessary.

20 MS. ZEILER: Jan, I should mention I put a  
21 copy of those references in the back of everyone's  
22 binder.

23 DR. MUTMANSKY: In the back of everyone's  
24 binder. I'm sorry. Yes. I didn't even realize that.  
25 At the back of your binder, you will find this list

1 of references, and there are quite a number of them  
2 that I can supply I'm certain, and what I'd like you  
3 to do is just go down quickly through those and find  
4 out who can supply these references? Now the first  
5 reference, Barclay & Leach, I know that --

6 DR. CALIZAYA: I do have it.

7 DR. MUTMANSKY: Felipe has a copy of that,  
8 so that will be Felipe.

9 MR. MUCHO: Again, you might want to cite  
10 the NIOSH thing, which will cover that. It's  
11 something you can look at.

12 DR. MUTMANSKY: Okay.

13 MR. MUCHO: If you cite the NIOSH *Methane*  
14 *Handbook*, it discusses Barclay & Leach and other  
15 researchers and so forth.

16 DR. MUTMANSKY: Well, if Felipe puts that  
17 into the discussion section, then somebody will have  
18 to supply that reference to Debra Janes.

19 MR. MUCHO: It's on the NIOSH website.

20 DR. MUTMANSKY: It's on the website? Okay.  
21 Good. Okay. Conti and Litton?

22 MR. MUCHO: I believe that's on the NIOSH  
23 website. If not, I can supply it.

24 DR. MUTMANSKY: Yes. Okay. Debra, if it's  
25 on the website, is that okay? You can just get the

1 web reference?

2 MS. JANES: Well, the -- I couldn't find on  
3 the website.

4 MR. MUCHO: You couldn't find it? I'll tell  
5 you where it's at. It should be on the NIOSH supplied  
6 references that we started this thing with. Let me  
7 double check that.

8 DR. MUTMANSKY: Response on fire sensors.

9 MR. MUCHO: It would be in the folder called  
10 general references that we got from NIOSH if it's  
11 there. Let's see. Evaluation, smoke sensors, fire  
12 detection. I don't see it there.

13 MS. JANES: Yes, I didn't see it there  
14 either.

15 DR. MUTMANSKY: Okay. So you'll take care  
16 of that, Tom?

17 MR. MUCHO: Yes.

18 DR. MUTMANSKY: All right. The next one,  
19 Dupree. I have that one, and I can supply that one.  
20 Dupree's phone conversation. I guess we're just going  
21 to have to leave that as such. Is that okay? Okay.  
22 I have the e-mail from Eslinger. I have Fiscor. I'll  
23 send that one. I have Hartman.

24 MR. MUCHO: You have Hartman and -- in the  
25 morning?

1 DR. MUTMANSKY: Yes.

2 MR. MUCHO: That's surprising.

3 DR. MUTMANSKY: I have Kennedy, and the next  
4 one is a phone conversation. The next two are phone  
5 conversations.

6 MS. JANES: But they're separate, correct?

7 DR. MUTMANSKY: What's that?

8 MS. JANES: Is that the same phone  
9 conversation or two separate phone conversations?

10 DR. MUTMANSKY: They're the same.

11 MS. JANES: They're the same?

12 DR. MUTMANSKY: They're the same, yes.

13 Okay. I also have McPherson. Okay. Mintz's. I  
14 don't know who provided that one, *Evaluation of*  
15 *Laboratory Gallery Fire Tests of Conveyor Belting* in a  
16 journal called *Fire and Materials*.

17 DR. WEEKS: I might.

18 MR. MUCHO: Me or Jürgen I think.

19 DR. WEEKS: I might have dug that up also.

20 MR. MUCHO: Yes, I know you did cite it  
21 somewhere, and I know Jürgen did also.

22 DR. MUTMANSKY: Do you have a copy you can  
23 share, Jim?

24 DR. WEEKS: I don't know. Who's the lead  
25 author?

1 DR. MUTMANSKY: Mintz, M-I-N-T-Z.

2 DR. WEEKS: Okay. It's going to take me a  
3 minute to find it.

4 DR. MUTMANSKY: Tom?

5 MR. MUCHO: Mintz?

6 DR. MUTMANSKY: Yes.

7 MR. MUCHO: I'm not sure. I first thought I  
8 had it, but I may not have it.

9 DR. MUTMANSKY: Okay. That would be in the  
10 discussion under flammability, right? Does that mean  
11 that you would probably have it, Jim?

12 DR. WEEKS: I can't say right now. I'm  
13 looking.

14 DR. MUTMANSKY: Okay.

15 DR. WEEKS: I don't think I've got it.  
16 What's the journal?

17 DR. MUTMANSKY: *Fire and Materials*.

18 DR. WEEKS: I can look for it.

19 DR. MUTMANSKY: Okay. Debra, if Jim does  
20 not find that, I can look in our university library.  
21 Although, I don't know we have that journal, so we'll  
22 keep looking for it. Okay.

23 MR. MUCHO: The NIOSH library may have that  
24 one.

25 DR. MUTMANSKY: That's a good point. They

1 might have that one. Okay. Sapko, RI8521, that's an  
2 old one, so it wouldn't be on the website.

3 MR. MUCHO: I have that.

4 DR. MUTMANSKY: You have that one?

5 MR. MUCHO: Yes.

6 DR. MUTMANSKY: Okay. Tom will get you that  
7 one. Timko, RI8735.

8 MR. MUCHO: I thought that came to us.

9 MS. JANES: No. I have that one.

10 DR. MUTMANSKY: You have that one?

11 MS. JANES: Yes. The next one on the list  
12 would be U.S. Bureau of Mines, *Fire Resistant Conveyor*  
13 *Belts* from 1955.

14 DR. MUTMANSKY: 1955? U.S. Bureau of Mines,  
15 *Fire Resistant Conveyor Belts Tests for Permissibility*  
16 *and Fees*.

17 DR. WEEKS: I've got that.

18 DR. MUTMANSKY: Jim has that one, so Jim  
19 will supply that one to you or a copy of it. Okay.  
20 That goes through it. Now, Debra, I have a feeling we  
21 have added more references since you made this list  
22 up, so you will have the authority to contact these  
23 people by e-mail and ask, and in most cases we should  
24 be able to help you supply that. Okay. The next  
25 issue we would like to address is the issue of

1 ordering of our topics in the final report.

2 Over lunch, we made a tentative order for  
3 you to consider. Do you have that all ready? No. 2  
4 is Other Belt Tests. It was No. 5 originally.

5 MS. ZEILER: The original No. 2 is No. 6.

6 DR. MUTMANSKY: I'm sorry.

7 MS. ZEILER: It comes after Coordinating  
8 BELT test.

9 DR. MUTMANSKY: Yes. Are you ready? Okay.  
10 I just wanted to mention to you that we clustered  
11 belt tests into a cluster of recommendations, and  
12 Conveyor Belt Flammability Testing and Approval would  
13 be No. 1, and then Other Belt Tests would be No. 2,  
14 and as we continue on down, Improve Fire Resistance  
15 Standards for All Underground Coal Mines is No. 3.  
16 Number 4 is Coordinating Belt Testing with Other  
17 Countries. Number 5 is Belt Entry and Conveyor Belt  
18 Maintenance. Number 6 is Special Requirements for the  
19 Use of Belt Air. Number 8 is Belt Air Approval and  
20 Recommendation.

21 MS. ZEILER: Number 7.

22 MR. MUCHO: I think it's 7.

23 DR. MUTMANSKY: I'm sorry. Number 7.

24 Number 8 is Discontinuing Point-type Heat Sensors.

25 Number 9 is Smoke Sensors. Number 10 is use of Diesel

1 Discriminating Sensors. Number 11 is Review of AMS  
2 Records. Number 12 is AMS Operator Training  
3 Certification. Number 13 is minimum and maximum air  
4 velocities. Number 14 is Escapeways and Leakage.  
5 Number 15 is Lifelines. Number 16 is Point-feeding.  
6 Number 17 is Respirable Dust.  
7           Number 18 is Mine Methane. Number 19 is  
8 Inspections. Number 20 is Research. Now, you  
9 probably recognize the first few are clusters that  
10 relate to belt testing, and then we have a cluster of  
11 sensor recommendations. I think there are three of  
12 those. Then comes AMS Records and AMS Operator  
13 Certification. Again, there's a cluster of two there.  
14 Then we go to minimum and maximum air velocities,  
15 escapeways and leakage, which can be considered to be  
16 clustered with the next one, Lifelines.  
17           Then we have Point-feeding, Respirable Dust,  
18 Mine Methane, Inspection and Research. Now, this is a  
19 rather arbitrary set of recommendations, but they're  
20 clustered somewhat logically, and if anybody has any  
21 thoughts about redoing these, please let me know at  
22 this point in time.

23           MR. MUCHO: One thought.

24           DR. MUTMANSKY: One thought?

25           MR. MUCHO: In many of these things, you

1 often see last research. Why is research always last?

2 DR. MUTMANSKY: If the Court Reporter would  
3 please note that we all laughed at Tom's comment. Any  
4 other thoughts about this? Good. Thank you very  
5 much. I think it's very appropriate at this point in  
6 time to take just a couple of minutes to make a few  
7 remarks.

8 MS. ZEILER: Can I interrupt just one  
9 second?

10 DR. MUTMANSKY: Linda would like to make a  
11 comment.

12 MS. ZEILER: I just want to make a couple  
13 remarks before you get to closing statements. One is,  
14 should you need it, we hope to have the draft  
15 transcript of these three day's worth of meeting  
16 available to you as soon a possible for help in  
17 finalizing the words. If you need to look back at  
18 what someone said, we hope to have that soon.

19 Secondly, just on behalf of MSHA, I'd like  
20 to thank everyone for your dedicated service on the  
21 Technical Study Panel and the important work you've  
22 done to put these 20 recommendations together. It's  
23 given us a lot of good stuff to work with, and I think  
24 I speak on behalf of the MSHA staff that we look  
25 forward to putting the final report together with you,

1 so thank you very much.

2 DR. MUTMANSKY: Thank you, Linda. I was  
3 going to make some of my own final comments concerning  
4 my feelings about the panel and the cooperation we had  
5 from MSHA. Is there anybody else on the panel, who  
6 wants to make comments prior to what I have to say?

7 MR. MUCHO: We'll let you say it in two  
8 votes.

9 DR. MUTMANSKY: Okay. Any other thoughts?

10 DR. WEEKS: I have a couple of things I want  
11 to say, but I don't care whether it comes before or  
12 after.

13 DR. MUTMANSKY: Well, why don't you say  
14 yours first.

15 DR. WEEKS: If you want the final word, by  
16 all means.

17 DR. MUTMANSKY: I definitely do.

18 DR. WEEKS: Well, first of all I want to  
19 thank the MSHA staff. I think you've been  
20 extraordinary, and it's an object lesson in be careful  
21 for what you ask for. You might just get it because  
22 you were very responsive to requests for information  
23 and so on and so forth, and I very much appreciate it,  
24 so thank you all for that. You've been a very good  
25 staff. I want to thank our chairman for keeping a

1 very steady hand in moving us to unanimous decisions  
2 on virtually every one of these.

3 I just hope that they're useful and that  
4 they make a difference, and also it's really been a  
5 pleasure working with everybody on the panel and a  
6 real collegial relationship, and it's been a real  
7 pleasure.

8 DR. MUTMANSKY: Anybody else?

9 DR. TIEN: I just want to endorse what you  
10 have said. You just took words out of my mouth.  
11 Thank you, Linda, and your staff. I really appreciate  
12 all the very timely support. Keep us in line in many  
13 cases, and I also want to thank Chairman Jan. It's a  
14 pleasure and also other folks and learning experience  
15 and I really appreciate the opportunity.

16 MR. MUCHO: Just to echo everybody's  
17 remarks, and I'll add it's been a great experience for  
18 all the reasons that have been mentioned here. I  
19 don't think I'll do this again, but --

20 DR. TIEN: Never say "never" again.

21 MR. MUCHO: Seriously, I have to tell you  
22 that, but it has been a very pleasurable experience  
23 and learning experience and nice people.

24 DR. CALIZAYA: For me too this was a great  
25 experience. I would like to thank all the members,

1 especially MSHA personnel for their help. I  
2 appreciate their feedback. The comments were very  
3 helpful.

4 DR. MUTMANSKY: Thank you, Jim, Jerry, Tom  
5 and, Felipe, for your comments. I appreciate them  
6 very much, and I would like to simply say that many of  
7 the thoughts that you have expressed were my exact  
8 thoughts. I thought that MSHA personnel were  
9 extremely cooperative in everything we asked them to  
10 do, and I really appreciate that, and I appreciate  
11 also how quickly they responded to our needs when we  
12 expressed them.

13 There are many people, who supported the  
14 panel, and if I were to try to mention all their  
15 names, it might take quite a while, but certainly we'd  
16 like to thank Linda, and we'd like to thank Trina.  
17 We'd like to thank Bill Francart, and actually we'd  
18 like to thank all of those who in any way  
19 participated, supported their efforts to help the  
20 panel do their work.

21 I'd also like to say I am just especially  
22 pleased to recognize all of the panel members for how  
23 cooperative they were. During the last three days in  
24 moving to our recommendations, every effort was made  
25 by every person on this panel to try to compromise

1 where differences existed and trying to get together  
2 to put together recommendations that were both useful  
3 and appropriate.

4 I would like to end by thanking the panel,  
5 and I'd like to encourage that you make every effort  
6 to get the final discussion sections in. I'll give  
7 you an extra day, October 1, and we will look forward  
8 to reading the report as constituted by the MSHA  
9 staff, and each of us will have some responsibility  
10 for those words in the final report, so you will  
11 probably have an opportunity to read the report one  
12 more time before it gets in its finalized form.

13 Jerry?

14 DR. TIEN: Yes. I don't know if it's  
15 appropriate to just ask one more question. What's  
16 beyond that? What do we expect once the report is put  
17 together and delivery and all that?

18 MS. ZEILER: Well, once we receive all the  
19 final wording for the discussion section, we at the  
20 MSHA staff will need to put any additional supporting  
21 background information in that kind of describes what  
22 happened at the meetings. Then I just wanted to  
23 follow-up on what you said. You definitely will see  
24 the final version and approve it clearly before it  
25 goes to print. It has to be in by December 20, 2007,

1 as you know. After that, MSHA has 60 days.

2           Is that right? I'm trying to remember  
3 exactly how much time. I think it's 180 days the  
4 Department of Labor has to respond to the  
5 recommendations that you put in the final report at  
6 which time we have to say for each recommendation what  
7 we intend to do with it.

8           DR. WEEKS: And it also goes to NIOSH, and I  
9 don't know who. Somebody in Congress I guess.

10           MS. ZEILER: That's true. The final report  
11 has to be cleared by not only the Department of Labor,  
12 but also HHS and Congress, but I believe that the way  
13 the MINER Act was written, only the Department of  
14 Labor actually makes a written response. That's  
15 right, and I'm getting concurrence from the solicitors  
16 on that, and it is 180 days.

17           DR. MUTMANSKY: Perhaps one final thing that  
18 we should mention is that Linda and I have more or  
19 less agreed that we will try to follow the general  
20 formatting of the 1992 Belt Air Report, and the way  
21 we've done our recommendations pretty much is in  
22 lockstep with that general format, so we're in very  
23 good shape to advance that particular strategy. Any  
24 final comments?

25           MS. ZEILER: One more thing I'll add is we

1 kind of informally agreed that we'd like to have this  
2 done before Thanksgiving, I mean the final report in  
3 that it's out of our office and maybe in final  
4 clearance at the Department by then. We're not going  
5 to take it down to the absolute wire.

6 DR. MUTMANSKY: Okay. Ladies and gentlemen,  
7 thank you for coming today. We end this session at  
8 this point. Thank you.

9 (Whereupon, at 3:08 p.m., the meeting in the  
10 above-entitled matter was concluded.)

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REPORTER'S CERTIFICATE

CASE TITLE:       MSHA: Technical Study Panel  
HEARING DATE:     September 19, 2007  
LOCATION:           Reston, Virginia

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Department of Labor.

Date: September 19, 2007

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