MINE SAFETY AND HEALTH ADMINISTRATION

PUBLIC HEARING ON THE PROPOSED RULE

FOR REFUGE ALTERNATIVES FOR

UNDERGROUND COAL MINES

AUGUST 7, 2008

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SHERATON HOTEL

2101 RICHARD ARRINGTON JR. BLVD.

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REPORTED BY: Dana Gordon

Certified Court Reporter

and Notary Public

A P P E A R A N C E S

MODERATOR:

Patricia Silvey

PANEL MEMBERS:

Howard Epperly

Regina Powers

Pamela King

Eric Sherer

Steve Turow

P R O C E E D I N G S

MS. SILVEY: Good morning. My name is Patricia W. Silvey. I am the director of the Mine Safety and Health Administration's office of standards, regulations and variances. I will be the moderator for this public hearing on MSHA's proposed rule for refuge alternatives for underground coal mines.

On behalf of Richard E. Stickler, the acting assistant secretary of labor for Mine Safety and Health, I would like to welcome all of you to today's hearing.

At this point, I would like to, if you would, please -- as we remember now, being that it happened one year ago yesterday, as we remember the one-year anniversary of that tragic mine accident at Crandall Canyon, I would like it if you would pause with me for a moment of silence in memory of the dedicated miners and the heroic efforts of the three rescuers who lost their lives in the Crandall Canyon accident, including one of MSHA's own.

And as we did in Lexington on

Tuesday, I would also like to remember as we come back to Alabama the miners who lost their lives some now seven years ago, I guess now -- nearly seven years ago in the Jim Walter Number Five accident.

So, if you all would pause with me for a moment of silence.

(A moment of silence was observed.)

MS. SILVEY: Thank you very much.

And I probably -- I should have added, too, as we reflected and paused, the memory of the many -- of all the miners who have lost their lives so far this year and throughout America's history and also the ones who toil in the mines and have lost their lives throughout the world. So, thank you.

At this point, I would like to introduce the members of the MSHA panel.

On my right is Howard Epperly who is -- Howard is the team leader of the -- our committee who is responsible for drafting the proposal that was in the June Federal Register. And he is with the

Approval and Certification Center of MSHA's office of technical support.

To his right is Regina Powers. Regina is an economist with the Department of Labor, office of the assistant secretary for policy, and she has -- and that office has been so kind and gracious as to allow her to be detailed to our office to help us compute this project.

And to her right is Pamela King, and she is a senior regulatory specialist in my office.

To my left, Eric Sherer. Eric is with the Office of Coal Mine Safety and Health, and to his left is Steve Turow. Steve is with the Department of Labor, Office of the Solicitors. And our -- the solicitors office that supports our office, the division of Mine Safety and Health.

This is the fourth and last public hearing on this proposed rule. As many of you know, we started out in Salt Lake City; then in Charleston, West Virginia on July 31 and Lexington on last Tuesday and this hearing today in Birmingham.

The comment period for the proposal closes on August 18th and MSHA must receive your comments by midnight eastern daylight savings time on that date.

You can view the comments on the Agency's website at www.msha.gov. And I believe we have some copies of the proposed rule in the back of the room.

As many of you know, the proposal would implement the provisions of Section 13 of the Mine Improvement and New Emergency Response or the MINER Act of 2006. The MINER Act requires -- required that the National Institute for Occupational Safety and Health or NIOSH conduct research on refuge alternatives. NIOSH issued its report in January of 2008.

MSHA's proposed rule is based on the Agency's data and experience, recommendations from the NIOSH report, research on available and developing technology and regulations of several states.

Before I start to discuss the proposal, I want to reiterate and underscore

an important mine emergency principle embodied by both MSHA and the mining community. It is a principle that is longstanding that in the event of a mine emergency underground the first line of defense is for the miner to try to escape. Only if escape is impossible would the provisions of this proposal come into play.

Under the proposed rule a refuge alternative would provide a protected, secure space with an isolated atmosphere that creates a life-sustaining environment to protect miners and assist them with escape in the event of a mine emergency.

The proposed rule allows the use of several types of refuge alternatives and includes requirements that the manufacturer or third party test the refuge alternative and its components prior to obtaining MSHA approval.

Under the proposal three types of refuge alternatives would be allowed: A pre-fabricated self-contained unit, a secure space constructed in place and materials pre-positioned for miners to use to

construct a secure space.

Some of the major provisions of the proposal are: Refuge alternatives would need at least 15 square feet of floor space and 60 cubic feet of volume per person.

The capacity of refuge alternatives near the working section would be the maximum number of persons that can be expected.

The capacity of refuge alternatives in an outby area would be the maximum number of persons assigned to work in that area.

Refuge alternatives would be located between 1,000 feet and 2,000 feet from the working face and where mechanized mining equipment is being installed or removed. For outby areas refuge alternatives would be located within one hour traveling distance. However, the operator may request and the district manager may approve a different location based on an assessment of the risks to persons in outby areas.

Refuge alternatives and their

components would need to sustain persons for 96 hours or 48 hours if advance arrangements are made for additional supplies, particularly air, from the surface.

Food, water, lighting, sanitation and a two-way communication system would be provided -- would need to be provided.

Refuge alternatives approved by the states or by MSHA in the emergency response plan or in the ERP prior to the promulgation of the final rule would be allowed until replaced or a 10-year maximum and refuge alternative components approved by the states or by MSHA in the ERP would be allowed until replaced or a five-year maximum.

The location, capability and capacity of refuge alternatives would be addressed in the written ERP.

Training of miners to locate, transport, activate, use and maintain refuge alternatives would be integrated into existing quarterly drills and annual expectations training.

Pre-shift examinations of refuge

alternatives would be required.

Refuge alternatives would need to be located on mine maps.

MSHA has estimated the economic impact of the proposed rule and has included a discussion of the costs, benefits and paperwork required in the preamble to the proposal and the Preliminary Regulatory Economic Analysis or PREA. The PREA contains estimated supporting data on costs and benefits.

The preamble addresses the provisions in the rule and includes a complete discussion of a number of specific requests for comments, but I would like to highlight some of these requests for comments that MSHA asks for the additional information on.

First, the estimated service life of pre-fabricated self-contained refuge alternatives and the estimated service life of components.

The proposed definition for breathable oxygen as 99 percent pure oxygen with no harmful impurities. Also, the

proposed minimum of 96 hours of breathable air.

The sources of heat generation within a refuge alternative, methods for mitigating heat stress and heatstroke and methods for measuring heat stress on persons occupying refuge alternatives. The proposed rule would require that the apparent temperature within refuge alternatives in use at full capacity not exceed 95 degrees Fahrenheit. And I would like to note that footnotes one and two in the preamble should have cited to the NIOSH as the basis for the Agency's proposal on apparent temperature.

We also ask for comments on whether a requirement that refuge alternatives be designed with a means to signal rescuers on the surface should be added in the final rule. Such a requirement would assure that rescuers on the surface could be contacted if the communications systems become inoperable. Also, whether the final rule should include a requirement that the manufacturer design refuge alternatives with a means to signal

underground rescuers with a homing device. This would assure that rescuers could detect the trapped miners within the mine.

The safety standards that -- in the proposal would require that a refuge alternative provide a two-way communication facility. That is part of the mine communication system which can be used from inside the refuge alternative and an additional system as defined in the operator's approved ERP. I would like to clarify that the proposed approval requirement should reflect the same requirements as the proposed safety standard.

We also ask for comments on the types, sources and magnitude of lighting needed for refuge alternatives. And on that issue, footnote three in the preamble should have cited pages 124 and 125 from the August 23rd, 1999 revision to the Department of Defense standard.

We also ask for comments on the proposed minimum space and volume requirements and the feasibility of using

certain types of refuge alternatives in low seam coal mines.

The proposed minimum flow rate of 12.5 cubic feet per minute of breathable air for each miner.

We also ask for comments on the proposed setting for pressure relief and whether a high pressure relief should be required. The proposal would require that fans or compressors provide positive pressure and an automatic means to assure that the pressure is relieved in refuge alternative at 0.25 psi above mine atmospheric pressure.

We also ask for comments on the proposed requirement that carbon monoxide detectors for compressors or fans at the surface provide automatic and visual alarms if carbon monoxide levels in supplied air exceed 10 parts per million.

The visual damage that would be revealed during pre-shift examinations. The proposed rule would require that refuge alternatives be designed to provide a means to indicate unauthorized entry or tampering

and allow for a pre-shift examination of critical components without entering the structure. The Agency is concerned with the feasibility and practicality of visually checking the status of refuge alternatives without having to enter the structure or break the tamper-evident seal.

We ask for comments on the proposed requirement for located refuge alternatives in inby areas as well as the alternate provision discussed in the preamble that would allow that refuge alternatives in these areas be located up to 4,000 feet from the working face depending on mine specific conditions, if they are connected to the surface with boreholes.

The proposed approach to the capacity of refuge alternatives in inby and outby areas -- and we've gotten comments on that issue -- and the proposed approach to locating refuge alternatives in inby areas including minimum and maximum distances.

Whether the final rule should contain a requirement that advanced arrangements specified in the ERP include a

method for assuring that there will be a suitable means to connect the drilled hole to the refuge alternative and that the connection can be made within 10 minutes.

We request comments on the proposed training requirements for persons assigned to examine, transport and maintain and repair refuge alternatives and components and whether it would be more appropriate to include this training requirement in Part 48 of the training requirements.

And finally we ask for comments on -- and very significantly on the proposed approach to annual expectations training in construction; where applicable, the activation, use -- and the use of refuge alternatives and their components. And comments -- we would be pleased if comments would address the proposed strategy and proposed elements of such training.

The Agency is also soliciting comments on the proposed information collection requirements. And on that issue if you would provide comments on all data

and assumptions the Agency used to develop its estimates as well as the estimates of costs and benefits in the proposal.

As you address these provisions either in your testimony to us today or in your written comments, please be as specific as possible. And I have underscored this at every hearing and I cannot underscore this enough. If you would please include specific -- your specific suggested alternatives, your specific rationale, safety and health -- if you would cover safety and health benefits to miners, any technological and economic feasibility considerations and data to support your comments. This -- the Agency will use this information, and the more specific your information is the better it will be to us. We will use it to help evaluate the requirements in the proposal and produce a final rule that will improve safety and health for underground coal miners in the event of a mine emergency in a manner that is responsive to the needs and concerns of the mining public.

The hearing, as many of you know, will be conducted in an informal manner and formal rules of evidence will not apply. The panel may ask questions of the witnesses. The witnesses may ask questions of the panel.

MSHA will make a transcript of the hearing available on the Agency's website within one week of the hearing. And as most of you know -- and I can't underscore this enough -- time will be of the essence in developing the final rule, which must be finalized by December 31, 2008.

If you wish to present written statements or information today, please clearly identify your material and give a copy to the court reporter. You may also submit comments following this hearing by any of the methods identified in the proposal. And we would also ask -- I think many of you have done so already. Those of you in attendance, if you will sign -- we have an attendance sheet in the back.

If you have a hard copy or

electronic version of your presentation -- and I think I mentioned that we would appreciate it if you would give it to -- a copy to the reporter.

Please begin by clearly stating your name and organization and I would ask you if you would spell your name for the court reporter so that we have an accurate record.

And now we will begin today's hearing, and our first speaker is I believe James Rau with MineARC Systems.

MR. RAU: It's R-a-u. Thank you, Ms. Silvey.

My name is James Rau, and I'm the manager for MineARC Systems in the United States. MineARC Systems have been designing, manufacturing and selling refuge chambers since 1995. MineARC has in excess of 450 refuge chambers in more than 20 countries including the Solid Energy Coal Mine in New Zealand for the past three and a half years.

MineARC's metal/non-metal refuge chambers have been rigorously tested and

used in real life emergencies with no injuries. The first of these was in April of 2006 at the St. Ives coal mine where it was used to rescue nine miners, and the last was in October of 2007 with 54 miners rescued at the Kanowna Belle coal mine in Western Australia.

It is this experience that has given our company the expertise and knowledge to determine the fundamental requirements for safe entrapment inside of a closed space such as a refuge chamber.

While there are many sections of this proposal that MineARC is willing and able to assist on, today I'm choosing to concentrate on one single specification for the proposed ruling. Under section 7.504, Refuge Alternatives and Components, General Requirements, it states, "The proposed rule would require that an application include test results and calculations to demonstrate that the apparent temperature within the refuge alternative would not exceed 95 degrees Fahrenheit when used in conjunction with required components and fully

occupied."

For those here whom are not familiar with the severity of heat buildup inside a confined space due to metabolic heat, I will mention a couple of examples. In the infamous Black Hole of Calcutta incident, 123 of the 186 British soldiers died when imprisoned for only one night in a dungeon.

In 2006 I personally had the opportunity to meet with a university student from the University of Santiago in Chile. She explained through an interpreter how a mining company had decided to conduct a test on a scrubber system for evaluating its CO2 removal efficiency. The company enclosed eight university students in a freight container and in less than 12 hours had hospitalized four of them due to heat stress.

Make no mistake, it is very common to misjudge the severity of heat buildup inside a refuge chamber.

I have personally been involved in multiple refuge chamber tests as well as

actual refuge chamber use in my mining career. Some of these tests have been without the use of cooling systems. These tests are generally short to avoid serious injury to the test subjects.

Integral to the safe operation of a refuge chamber is a cooling system for combating metabolic heat buildup. Uncontrolled, metabolic heat buildup can lead to heatstroke and possible fatalities. MSHA's proposed ruling supports this claim in stating: "Medical evidence revealed the values of approaching or exceeding 105 Fahrenheit apparent temperature would be life-threatening."

The ruling proposes a maximum internal apparent temperature of 95 degrees but omits a maximum external ambient temperature that the chamber must operate under. The proposed ruling does correctly state that ambient temperature in a refuge alternative is affected by the mine temperature. More appropriately, though, it is the single most important factor in determining the rate of heat transfer to the

outside of a refuge chamber. It is therefore critical for design and testing purposes that the final ruling specify a maximum ambient mine temperature that the refuge chamber must operate under.

Utilizing generally accepted engineering practices, this value would be a maximum expected temperature of the mine in an emergency situation with an appropriate factor of safety.

The State of West Virginia has already approved refuge chambers without cooling systems. Identical to the MSHA proposed ruling, the West Virginia regulation specifies the maximum internal apparent temperature of 95 degrees Fahrenheit.

Approved manufacturers demonstrated compliance by computation and experimentation using an assumed ambient mine temperature of 55 degrees Fahrenheit. The 55 degree value chosen is an assumed average temperature at the face for a West Virginia coal mine. This value does not consider possible temperature increases in

an emergency situation from loss of ventilation, fire or an explosion. It is extremely confusing from an engineering standpoint why an average value would be used with no safety factor.

I would like to give a similar analogy. It would be like designing a bridge that can only hold the average number of cars expected to be on that bridge during one day. MineARC as a company made a decision that this stipulation did not meet our own internal safety requirements and hence, we did not seek approval in West Virginia.

The recent NIOSH simulated testing of West Virginia approved refuge chambers provided partial evidence of the inability of some of these chambers to maintain internal temperatures below the specified criteria. This testing was conducted at Lake Lynn mine at approximately 60 degrees Fahrenheit. This is in spite of the fact that the simulated testing potentially underestimated the heat buildup inside of the refuge chamber by 20 to 30

percent if human occupants had been used.

Regardless, these chambers have been approved in emergency response plans by MSHA and are currently being installed in coal mines across the U.S.

I would like to quote Randall Harris who is the technical advisor to the West Virginia Mine Safety Technology Task Force in his presentation last week in Charleston. And I quote: "The task force was focused on the mining conditions in West Virginia. We did not attempt to develop solutions that were universally applicable. Many vendors and experts from outside the U.S. presented forceful positions concerning, for instance, the ability of a shelter to maintain an internal temperature without mechanical cooling, which while valid in many mining environments were not applicable to the conditions of West Virginia."

Clearly this statement verifies that the West Virginia approved chambers have not been designed for the use of ambient conditions exceeding 55 degrees

Fahrenheit.

I, however, would challenge Randy and his opinion that it is not applicable to West Virginia. Even a small increase in ambient temperature would render these chambers unable to meet the specified criteria. In some instances a 10 degree Fahrenheit increase could potentially endanger the lives of the occupants. From survey data collected by MSHA and displayed in the NIOSH report, there are some West Virginia mines that can have maximum temperatures of 69 degrees Fahrenheit.

I would therefore challenge the task force to use the same logic that they used to specify that a refuge chamber should not be required to sustain an overpressure above which there is not likely to be human survivals. That value is approximately 10 psi and they set a value of 15 psi.

If we were to use this analogy and apply it to temperature, the maximum temperature a human can survive outside of a refuge chamber for extended periods would be approximately 130 degrees Fahrenheit.

Therefore, a refuge chamber should be able to operate up to this external temperature.

Under section 7.501 of the MSHA proposed ruling it states, "Refuge alternatives that states have approved and those that MSHA has accepted in approved emergency response plans would meet the requirements of this proposed ruling." This statement can only be interpreted as MSHA ignoring operational deficiencies in currently approved chambers.

The proposed rule correctly points out there's currently no permissible air conditioning equipment which will overcome the heat buildup in underground coal mines. Nevertheless, several refuge chamber manufacturers are currently developing intrinsically safe cooling systems.

MineARC Systems believe that we have resolved this issue without the use of a conventional electrically powered air conditioning system. This system is to be tested in a coal mine by the Mine Rescue Board of New South Wales with human

occupants.

We encourage MSHA to meet and consult with MineARC and other manufacturers to determine at what stage of development their solutions are for this problem.

To provide MSHA with as much information as possible in regards to heat buildup inside of a refuge chamber, MineARC Systems commissioned an independent man test. This was a response to the proposed ruling.

The purpose of the test was to determine the heat buildup inside of a steel refuge chamber with an average external temperature of 80 degrees Fahrenheit. This ambient mine temperature is equivalent to temperatures found in many coal mines in the U.S. and in most mines in the State of Alabama.

The test was conducted with six people in an eight-person MineARC refuge chamber. As per the MSHA proposed ruling, each occupant had approximately 60 feet cubes of volume and 15 feet squared of floor space. With an average external temperature

of 80 degrees Fahrenheit, the internal apparent temperature of the refuge chamber reached a staggering 143 degrees Fahrenheit in just 128 minutes. These conditions are considered extreme and life-threatening for extended durations.

I've brought with me a few copies of this report for any interested persons in the audience or alternatively please visit the MSHA website and download your own copy under the sections -- comment sections.

Thank you.

MS. SILVEY: Thank you. I have a few comments and questions, and I'm sure some of my colleagues do also. And thank you for your comments.

First of all, in going back to your -- and at the beginning you gave us -- you talked about heat buildup in a confined space and you gave the example of eight people in a freight container.

MR. RAU: Yes.

MS. SILVEY: Yes. Would you repeat that part of your -- again?

MR. RAU: Yeah, I can explain it.

MS. SILVEY: Yeah.

MR. RAU: The situation was -- I was actually at an expo in Santiago and we were displaying one of our hard rock refuge chambers and a girl came in and she was speaking with one of our distributors. And the distributor came and grabbed me and said you've got to hear about this.

And she had explained that -- she was interested because she saw the cooling system inside of our refuge chamber. Our conventional metal/non-metal refuge chambers use a battery backup system with a standard split system air conditioner.

She saw it and she said I was involved in this test. One of the mining companies came along. They plucked eight students who needed the money out of the university and they were involved in the test.

And what they did was they put a scrubbing system inside a freight container and then they sealed it so they could monitor the CO2 expiration and the efficiency of the CO2 scrubber.

MS. SILVEY: And how big was this freight container?

MR. RAU: A standard 20 foot freight container.

MS. SILVEY: So, it was not the -- it did not meet the size of the --

MR. RAU: With eight people it would have gone -- it would have far exceeded the size on a 20 foot -- it's a 20 foot by 8 foot.

MS. SILVEY: Okay.

MR. RAU: Yeah, it would have far exceeded it. It would be close to -- it would probably be double. It would be somewhere in the vicinity of 120 feet cube per person.

MS. SILVEY: Okay. So, your suggestion is for a maximum external ambient temperature, recognizing, as sort of was implicit in your -- in your comments, that the external ambient temperature in the mines are going to vary throughout the United States and even sometimes within certain -- the same geographical area depending on the conditions in the mine. Do

you have a suggestion for how that should be addressed?

MR. RAU: Well, as I said, if you use -- if you use the same logic that the task force used in terms of allowing the inflatable shelters, which was the -- beyond 10 -- at 10 psi your lungs will collapse from an explosion. So, you can sustain -- when we design --

MS. SILVEY: Well, I guess I'm asking you do you have a suggestion for how we should address the maximum external ambient temperature?

MR. RAU: I think it should be up to what you can reasonably survive outside of the refuge chamber. So, if there's an explosion and there's a fire and you're outside of that refuge chamber and you're traveling to it, if you can still survive in the ambient mine conditions, you should have an opportunity to get inside that chamber. That temperature is about 130 degrees Fahrenheit.

MS. SILVEY: I'm not --

MR. RAU: Am I missing the

question?

MS. SILVEY: I guess I'm saying for certain -- we've got to draft a regulation --

MR. RAU: Yeah.

MS. SILVEY: -- that will apply to a variety of mining conditions. And I guess I'm asking you if you say we did not -- in the proposed rule we did not address this factor, even though, as you said, we spoke about it, but we did not address it as a requirement, do you have -- and you don't have to provide that to me right now, but do you have a suggestion of how such a rule would be crafted to address that issue?

MR. RAU: As I said, it depends whether you want to use a prescriptive measure and say they must operate up to 130 or you use a risk assessment base. And you know, typically I'm in favor of risk assessment base because one --

MS. SILVEY: That's where -- this is where I'm trying to go.

MR. RAU: One shoe doesn't fit

all --

MS. SILVEY: No.

MR. RAU: -- with refuge chambers. And on a mine by mine case, you need to sit down and do a 10 based risk assessment and look at, okay, what is the maximum external temperatures that we could conceivably have here. And obviously that's going to be in summer months. And then we need to allow for loss of power. The first thing you do in an emergency, if you have an explosion, the power gets shut down. You lose your ventilation system. How much is that reasonably going to increase that temperature?

MS. SILVEY: You also spoke about the cooling systems and you said that you all, MineARC is resolving this issue without -- if I heard you correctly, without an air conditioner system and you are now testing that. Do you have -- when do you anticipate that the testing will be complete?

MR. RAU: They're actually running -- they've already run a series of

tests on it. They're running another man test, in-house test this Saturday. They'll be running an independent test the following week and then it will be taken from there to a coal mine. And the New South Wales Coal Mine Rescue Board will actually test it in a coal mine with mine employees.

MS. SILVEY: Okay.

MR. EPPERLY: It's non-electrical?

MR. RAU: Correct. There are -- there are other manufacturers, though, that are developing -- I mean, I speak to other manufacturers on a regular basis and I know that they're working on the same issues.

MS. SILVEY: Yeah. And then I wrote a comment here. So, you're going to have to help me. I guess it was with respect -- I know what it was now. That test that -- and I guess you might have been one of the subjects yourself, the eight-person heat test. And were all the requirements consistent with the MSHA proposal in the test you conducted that yielded the apparent temperature of 143

degrees --

MR. RAU: Yes.

MS. SILVEY: -- or whatever it was?

MR. RAU: We developed a testing protocol of the proposed legislation.

MS. SILVEY: So, everything else was consistent with every --

MR. RAU: Correct.

MS. SILVEY: The CO scrubber, all of that?

MR. RAU: Correct.

MS. SILVEY: I don't think I have any more. Do you have anything?

MR. EPPERLY: On the reference you made to the NIOSH testing and you mentioned 20 to 30 percent without human subject testing, could you explain that a little more, what you meant by that?

MR. RAU: What they did when they -- they set up the protocol -- just to -- to give you a very quick understanding of the mechanisms of heat dissipation inside of a refuge chamber, you have a person sitting inside. They generate metabolic

heat. That heat is made up into sensible and latent components. You then have radiant heat transfers from that person to the air. You have convective heat transfer through your conductive medium, whether it's an inflatable tent or a steel and then from that material to outside, convection again. So, that is the key mechanism there. It's not so much the material you use as the air inside which is the issue.

Now, with the testing that they set up, they were simulating human conditions. As soon as you put people inside of an enclosed space, you have a finite amount of water vapor. As you expire, each person typically every hour will expire 30 mils of water vapor per hour.

On top of that you are sweating. As the temperature increases inside of the refuge chamber and the humidity goes up, initially when your body is at rest you're using -- you're evaporative cooling as you sweat. As it gets hotter, you lose that ability to evaporatively cool. So, radiant cooling takes over and becomes the larger

percentage.

What they did is they didn't allow for two things. One, they didn't allow for the sweat rates. They underestimated when they injected the water vapor into the chamber probably by about 1,000 percent. They allowed only for expired air. They didn't allow for any sweat rates.

And I can testify having sat in these refuge chambers during heat tests that it's like you're in a swimming pool. The water is dripping off the roof. People are constantly sweating. And you need to allow for that because it goes into the air.

The other issue is that when they injected that water vapor into the chamber, they injected it in at the ambient mine temperature. When you expire, you expire air at 95 degrees Fahrenheit. That is where they underestimated by 20 to 30 percent. Coupled with the fact that they didn't inject enough water moisture into the actual environment, the actual result could have been worse.

I mean, it was proven -- the interesting thing was that NIOSH actually -- or it might have been Foster-Miller, but they contracted Raytheon to do computational modeling on the Lake Lynn testing and they identified it. They said, hey, you've made a mistake here. You didn't inject the moisture into the environment at the correct temperature.

Instead of leaving the results where they should have been, they called up NIOSH and said, did you inject it at the mine temperature? And they said, yes. Then what they did was they went back into their computational model and put an assumption in that it was injected in at the mine temperature.

It's like it's -- you know, it's voodoo engineering. It's not what the results should have been. It's matching the computational modeling to the actual testing.

MR. EPPERLY: The measurements you made in the chamber in your tests, what instrumentation -- or how did you measure

the apparent temperature?

MR. RAU: We had a -- we had contracted an independent company to come in and they used a series of different measuring equipment. I'm not sure of the actual models. It's all in the report. And we were logging carbon dioxide, oxygen, carbon monoxide, dry-bulb, wet-bulb, relative humidity inside.

And we took that and we used the same formula that West Virginia was using, put it all into spreadsheets and then we also compared it against some other indices as well, the heat stress indices, wet-bulb globe, just to basically to see if we changed the indices what would the results be.

You're dealing with extreme temperatures. 100 percent humidity and 95 degrees Fahrenheit. You cannot sustain those temperatures for long. We physically had to send our employees home after the two hours of testing.

MS. SILVEY: Does Australia require that these refuge chambers be

approved?

MR. RAU: Australia on the coal side --

MS. SILVEY: On the coal side, right.

MR. RAU: Yeah. On the coal side we've been using --

MS. SILVEY: I know about -- I suspect I know about the non-coal side. So, I'm talking about the coal side.

MR. RAU: On the coal side it's really -- it's a new market as per here. We've always used the -- the Drager quick fill stations and that's been the typical evacuation route. Refuge chambers haven't been used on the coal side in Australia.

It's only coming in -- the miners will write a guideline in Australia. We avoid prescriptive measures. We typically -- a legislation is set up to be non-prescriptive. So, the reason being that everything should be risk assessed. What it is good for one mine -- if you say -- just a very simple explanation: You've got an explosives magazine and you've got one ton

of explosives and you say you can't smoke within 10 yards, that doesn't mean if you've got 100 tons that it should be 10 yards. You need to assess your risk, control it and deem what the standard will be.

MS. SILVEY: So then with respect to the mines -- the underground coal mines in Australia, percentage-wise how many have refuge chambers now?

MR. RAU: None. They're all using --

MS. SILVEY: None?

MR. RAU: They're all using the Drager system.

MS. SILVEY: So, none have --

MR. RAU: None.

MS. SILVEY: Okay.

MR. RAU: Actually, I shall stand corrected. There's probably -- there's one mine in Queensland which is called Grass Tree and they've got three. They're -- again, they're not used as refuge chambers. They're not termed "refuge chambers". They're termed "changeover stations". And it's the exact same scenario with our

customer in -- in New Zealand.

MS. SILVEY: Yeah. I was going to -- that's the next thing I was going to ask you. And I know you said in terms of coal and I'm talking about coal. Where are your units used now?

MR. RAU: Solid Energy is the only one. The unit we have just recently designed is a new unit. It's going through testing. It hasn't been sold to any coal miners.

MS. SILVEY: Okay.

MR. RAU: The mine in New Zealand, Solid Energy uses one of our existing hydrophiles in a non-intrinsically required area.

MS. SILVEY: Sure.

MR. EPPERLY: The coal mines, you mentioned the two, what was the supplied air -- if you know, the supplied air system for those particular chambers?

MR. RAU: They ran off of three separate breathable air systems and on the first one -- the first being the compressed air, which obviously the coal mines here

don't have. The second is a medical oxygen in conjunction with a carbon monoxide, carbon dioxide scrubber; and then the third system is a sodium chlorate oxygen kennel.

What we found in those incidents was, though, that within the first hour they lost power and compressed air. So, they were sitting completely autonomous in a standalone using the medical oxygen and the scrubbing systems.

MS. SILVEY: And I might be asking you a question now that you can't answer. I suspect not, but if you can't, then don't -- feel free not to. Do you have any -- you talked about the fact that you -- you all did not feel comfortable submitting your unit to West Virginia. Do you all have any plans -- future plans for submitting an approval let's say to MSHA, anything to MSHA for approval?

MR. RAU: Yes. I mean, we would feel comfortable submitting to MSHA now -- sorry. To West Virginia now because we'll know -- we know that our chamber will operate under a range of conditions. We're

not going to make the assumption that each miner is going to be 55 degrees Fahrenheit.

MS. SILVEY: I understand.

MR. RAU: I mean, we could have delivered something to the market very quickly.

MS. SILVEY: Thank you. Okay. I don't have -- do you have anything?

MS. POWERS: The economists might be interested in contacting you at a later point.

MR. RAU: I just -- can I ask a question?

MS. SILVEY: Yes.

MR. RAU: Right from the --

MS. SILVEY: I said you could.

MR. RAU: Right from the outset you said that this needed to go through December 31st.

MS. SILVEY: Yes, I did.

MR. RAU: I'm urging you to not make the same mistake as what I believe West Virginia did in terms of putting deadlines on things which take time to resolve.

MS. SILVEY: Okay. I can

answer -- I mean, I will speak to that. Maybe not answer it, but in that I said it needed to go through and clearly -- and I think I said this in Lexington. I said it in Charleston and I hope I said it in Salt Lake that we will do -- and I think I said it this morning. We will do the best job we can to craft the best reg we can by December 31st that responds -- and we appreciate everybody's comments and their attendance. To respond to, as I put it, the needs and the concerns of the mining public to try to craft the most safe rule that we can.

Now, recognizing that we have a deadline -- and the deadline is not one we put on ourselves. It was one put on us by the United States, by the -- it's a statutory deadline. And when you've got a statutory deadline, unless the statutory deadline moves, there's not much that we can do about it.

But I think everybody has heard me say it and I will say it on the record and off the record that we will try to come up with the best rule we can. And believe

you me, I mean, you know, within the constraints that we have and -- and we'll do what we can and we'll look at all the data that we have. And that's probably -- I said, you know, to somebody one time before, there are no guarantees in life, but you do the best you can. And we will do that and we will -- at this point in time we'll try to meet our deadline because we have an obligation to do that.

MR. RAU: I think it would be very interesting just from a collecting exercise to get -- you know, you've got a lot of great manufacturers here and we're not the only manufacturer who is trying to resolve this issue and everyone here has altruistic motives. The important thing here is the miners, making it a safer environment. I think if you put a lot of the manufacturers together, you could hash out a lot of these issues in a very short time frame to meet that deadline.

You know, what I saw in the West Virginia process was that it was all very isolated, people being very protective.

MS. SILVEY: That's why we're asking everybody -- I think we have other manufacturers in here and we are asking everybody for their comments. So, if people would provide -- and you heard me say earlier be as specific as you can. The more specific you are the -- that becomes very useful to us. So, we will -- and we will be guided accordingly and try to do our best. I promise you that.

MR. RAU: I will go back and write other comments on other sections. I've only focused on this because I believe it's the most important, but I'll go back and go through and offer suggestions in all areas and put it through our business.

MS. SILVEY: We appreciate that. Thank you.

MR. RAU: Thank you.

MS. SILVEY: Our next speaker will be Noble Linn, United Mine Worker, Jim Walter Number Four. Mr. Linn.

MR. LINN: Linn, L-i-n-n. I totally agree with Mr. Rau's statement that one shoe doesn't fit all.

In regards to the effects of what heat will have upon Alabama coal miners I believe there are too many variables to consider in order to precisely calculate the apparent temperature of a group of miners confined in a refuge alternative 2,000 feet underground from this room or from any other room in the State of Alabama.

I believe the only true way to actually know the combined effects of air movement, heat and humidity on the human body is through actual human testing in an Alabama coal mine on Alabama coal miners in their own environment.

In MSHA's own words on page 142, middle of the third column and I quote: Body heat is a primary heat source in a refuge alternative and the humidity will likely be high in such a sealed environment. The carbon dioxide absorption process also generates heat and humidity. There's currently no permissible air conditioning equipment which will overcome this problem in underground coal mines, end quote.

MSHA's use of the phrase "the humidity will likely be high" is such a general statement that it only reinforces their admission that there is a problem with no equipment to solve it. This problem can only be solved in our opinion through actual human testing.

This testing must be done under the direct supervision of MSHA, the representatives of the miners, the manufacturers of these systems, state agencies, representatives of all related fields of study and science from all major universities and the representatives of the coal companies.

Only actual human testing will provide the information that is needed to work and solve this problem. It will provide the data that will reveal the unforeseen problems that no one thought of. It will provide proper procedures through actual hands-on training. It will be a great opportunity for all interested parties to provide and gather valuable information that can be used for the present and study

for the future -- for the future of the coal mining industry and most importantly, for the future of Alabama coal miners.

Thank you.

MS. SILVEY: Thank you, Mr. Linn.

Our next speaker is Jim Yates, UMWA, Jim Walter Number Four.

MR. YATES: Good morning.

MS. SILVEY: Good morning.

MR. YATES: Jimmy, J-i-m-m-y, Yates, Y-a-t-e-s.

I'm addressing the concerns of the pre-shift examination. MSHA requests specific comments on the visual damage that would be revealed during the pre-shift examinations. The Agency is concerned with the feasibility and the practicality of checking the status of the refuge alternatives without having to enter the structure or break the tampering-evident seal.

The practice of visually examining equipment on a routine basis is the essential first step in ensuring it is in operational condition. These exams could

reveal any number of problems that may exist. Properly trained examiners would be able to detect potentially dangerous conditions that could result from collision with other equipment or damage sustained while moving these refuges. These could be as minor as a shear bolt or a dent on something that could be comprising the chamber's functionality.

The Agency's concern that a visual check may not be effective without access to the inner workings of the unit are unfounded. Doing these pre-shift exams may lead to additional examinations and repairs that could remove the unit from service until completed. The union strongly supports the practice of performing a pre-shift examination on all refuge chambers.

And also, don't we have the technology to have a type of gauge of some sort on the outside of the chamber to check the O2 level, for instance?

Thank you.

MS. SILVEY: Okay. So, you are

suggesting that there be some way of checking the -- pre-shift checking the refuge alternative from the outside without having to enter the refuge alternative?

MR. YATES: Yes, ma'am.

MS. SILVEY: We also got some comments during this -- these past two weeks from some commenters who said that the refuge chamber, refuge alternative may not need to be checked on a daily basis, but alternatively could be checked as recommended by the manufacturer. Do you have any comment on that?

MR. YATES: I would say the -- we would -- I would think that we would want to go beyond the manufacturer's recommendations as far as examinations are concerned. I would think maybe not on a daily basis, but on like a weekly examination route. Now, if the manufacturer says a week at a time, I would want to do something just a tad better.

MS. SILVEY: Thank you.

MR. SHERER: I have a question.

MR. YATES: Yes, sir.

MR. SHERER: I would like to clarify something, Mr. Yates.

You mentioned that you support pre-shift exams and then you also mentioned that you support weekly exams. Is the weekly in addition to the pre-shift? Is that what you meant?

MR. YATES: What I mean -- I think we do need a pre-shift examination, yes, sir.

MR. SHERER: Thank you.

MR. YATES: Thank you.

MS. SILVEY: Our next speaker is Dale Byram, Jim Walter Resources.

MR. BYRAM: Thank you. My name is Dale Byram, B-y-r-a-m, and I work with Jim Walter Resources in Brookwood, Alabama. And I appreciate the opportunity to speak to the panel and I also appreciate everyone that's taken the time today to come and share their thoughts about something that is as important as mine safety.

In recent years terms such as "forced technology" and "offers of promise" has been associated with mandates, PIBs and

other regulatory actions. I'm convinced that the intentions were honorable and direct and that they were all directed towards moving to improving mine safety and helping to ensure the survivability of our miners. Yet mandating the use of refuge alternatives that are clearly unproven and lack human testing for the required duration of 96 hours in our environment in Alabama is more life-threatening than it is life saving.

Alabama has unique conditions. As a matter of fact, this morning in Birmingham one of the local television stations reported that it was 80 degrees outside with 87 percent humidity. If you use a heat index chart, that's an apparent temperature of 90 degrees. And as most of you know, that's only five degrees below the maximum apparent temperature that we're trying to maintain in our refuge alternatives. Probably by now it's even above that. Again, Alabama has unique circumstances and unique temperatures.

At Jim Walter in our mines our

ambient temperature averages 76 degrees. And even though these conditions again are unique to Alabama, a group of escaping miners, whether they be in Utah or whether they be in Alabama, once they retreat into a refuge alternative and close the door, they then begin to experience similar environmental changes. You will see rapid temperature increase and you will see rapid humidity increase. And these two factors together, as has been said earlier by some of the commenters, directly affects the body's ability to control and maintain a survivable temperature.

The preamble stated that temperatures that reach 105 degrees is life-threatening and that the apparent temperature of 95 is the maximum that you recommend to stay within the refuge alternative.

At present we know of no rescue alternative that can meet that requirement in Alabama and recommend continued testing before being required to knowingly install rescue alternatives that will risk a life

rather than to save a life. And I make those -- those comments directly towards 7.504.

You asked for comments I think on the expectations training under 75.1504, and we recognize the value and support expectations training and believe that this is the way we need to move in the future. I don't know what the reg's intent or the panel's intent would be, but we would like the freedom to use simulators or -- or training panels rather than the entire containment. If our company chooses to use containment, a unit, then we would like the ability to use, again, simulators and training panels.

This would take less space. It would be more conducive to training our miners to use the critical applications of these units to where they can -- it becomes second nature if they have to open or deploy the unit and then enter the unit.

Under 75.1507, one of the areas that is referenced is the minimum amount of calories of food and water for the -- for

the survivors or the escaping miners that may be entrapped within the refuge alternative. When you do research on this, when you look at Coast Guard approved survival packets and products and things, you see a variance of calories that are needed.

And we want to take care of our miners. That's unquestionable. Space apparently is a valuable commodity within a refuge chamber. I would like to see a range of appropriate caloric intake rather than 2,000.

The other issue that's important to us that also reflects the results that's been identified before from previous speakers is where your body continues to sweat and lose its fluid compartment or depletes its fluid compartment. In the proposed reg it talks about 2.25 quartz of water per person. In a 15-man containment, this could be about 35 gallons of water that would have to be there.

One of the things that happens when the body begins to sweat, it begins to

lose electrolytes which are vital not only in the maintenance of the fluids in the body, but it even goes into the functioning of the heart. I would like for the panel to consider electrolyte substitutes as part of this fluid requirement within the chamber. I think this would help to extend someone's survivability.

Ms. Silvey talked about potential light sources. We have found that chemical light sticks, kind of the break and shake light offers an opportunity to provide an ambient light. They're small in their size. You can get them that last a varied number of hours from four all the way through 12 hours. That's not a recommendation, but that's just a suggestion for something for the panel to look into. They're non-toxic. It would not cause a problem within the barricade.

My comments were general, but our concerns are great. We have very little faith that our miners can survive in a refuge chamber in an Alabama temperature for 96 hours with what's available to us at this

point.

We're open to your suggestions and we're open to work with any of the agencies or the manufacturers to try and develop a unit that can help to improve the survivability of our miners. Thank you.

MS. SILVEY: Thank you. I don't really know -- you state first of all, Mr. Byram, that your comments were general, but your concerns great or something to that effect. And if you -- I take it that either through Jim Walter or some other forum if you all -- if you have more specific comments, to provide them before the comment period closes on the 18th, if you will do that. And I take it then that you all do not have any refuge chambers underground now.

MR. BYRAM: We have refuge chambers on order. We haven't received them from the manufacturer. We have barricade kits that we developed underground that have the food and the water, but they do not have oxygen capabilities.

I would like just to expand on

something, if I could. We researched various ways to comply with providing our miners with 96 hours of breathable air. We looked at inflatable walls. We looked at building with building material and sealing the walls with purging capabilities. We looked at everything that we could because we felt that if we could build the containment, that it would allow us to isolate a larger area to help dissipate heat, that the roof rib and footwall would be more efficient in doing that than being inside of this containment.

When we thought about everything involved, then we recognized that we stood to lose miners in a hostile environment attempting to build and purge an area than if we could more easily and quickly go to a containment, drop a door, turn a few valves, let it deploy and get into the airlock.

But we had to make a choice because the reg demanded that we put their -- these chambers underground, which we want to protect our miners. Don't misunderstand that. But we had to make a

choice on how we can provide the best chance for survival up front and then try and let our mine rescue teams reach these people and remove them before they -- the 30 to 40 hours.

In our conditions with the containments that are available we do not believe that our miners can survive the full 96 hours.

MS. SILVEY: Excuse me a minute.

MR. EPPERLY: I had a question.

MR. BYRAM: Yes, sir.

MR. EPPERLY: The things that you considered, did you consider built in place, the second option and how that --

MR. BYRAM: You mean a fixed room underground?

MR. EPPERLY: Yes.

MR. BYRAM: We have that at one of our locations.

MR. EPPERLY: And do you feel that that would meet the apparent temperature proposed in --

MR. BYRAM: I think that it has a greater chance of success. The problem with

that is it's a fixed location and as a mine operates and moves, you're continually having to move your containments. And at roughly 2,000 feet to continually bore holes and things like that just isn't a good alternative.

MR. EPPERLY: What about without a borehole? Did you consider moving the materials, the oxygen and the CO2 scrubbing?

MR. BYRAM: We have looked at CO2 scrubbing. We have looked at oxygen containment and purge oxygen. The configuration was the -- equal to the same size as a containment and then you would have to build. And there again, the timeliness -- if you're involved in a situation and having to build -- we felt like just going with a containment offered the best of all the options, the lessor of the evils. Although one of our mine sites, Number Four mine has an underground waiting station near an exit.

MS. SILVEY: I want to follow up on your comment, Mr. Byram, about the training. One of the things we

contemplated -- and I'm saying this for everybody -- in the proposed rule was that the -- and not that we mandated this, but that if operators so chose, they could integrate the training into the existing -- and I'm sure all of you all are familiar with the emergency mine evacuation rule that we put in place on December 6th of '06 and -- or it may have been December the 8th, but one of those days. And where we require the quarterly drill training and annual expectations training on self-contained self-rescue devices.

So, one of the things in building on that, we thought that the operators might integrate the refuge alternative training into that quarterly drill training and the annual expectations training for the SCSRs. Have you thought about the training and contemplated how -- how you would structure your program on that training?

MR. BYRAM: We haven't decided yet, Ms. Silvey. We're still giving -- we're having discussions and consideration. Expectations training is realistic training.

MS. SILVEY: Yes.

MR. BYRAM: I think that it's vital for the success for whatever device you're trying to teach our miners to use. Again, I think that rather than have a full sized unit to where the entire canopy has to be deployed and things like that -- I don't think that's necessary, but I do think the critical function such as the immediate deployment, the controls that you turn on and how you would interact within the airlock and turn your oxygen system on and everything, I think that's -- that is a necessity and I think that should be done annually in expectations training.

And I really don't want to -- my guys that have to deal with all the expectations training now and self-rescuers, that's not a quick thing. It takes probably 45 minutes per miner to get -- or per class to get through this.

But I -- for me personally I think that when we get these units in our mine, we need to have that as a separate training entity so it's not confused with

other training issues.

MS. SILVEY: Okay. Thank you very much.

At this point, is there anybody else in the audience who wishes to make comment?

(A hand is raised.)

MS. SILVEY: Yes, sir.

MR. GREEN: My name is Randall Green, G-r-e-e-n, and I'm representing the United Mine Workers, Local 1948. And I just wanted to make three comments on the chambers.

We are glad to see that we've got standards coming down to get these chambers in the mines. I know there's a lot of comments today on how we're going to sustain it and the atmosphere control and stuff like that, but once we get a start in the mines, I think technology will follow to improve it.

One thing that's an option, which our mines employ, is a breathable air hole, breathable boreholes that we have now. I think that's one option that can be used

with the chambers at this time. In most of the mines in the country these boreholes can be -- can continue to be drilled and we can hook breathable air holes for ventilation to the units. But at the same time, with the technology that we have already available, the environmental controls in the units must be provided as a backup also, the best that technology has. So, we support that.

Also, if you think about this, this gives the miners a chance to try to escape, which would be our first option. They'll have the opportunity to stop at these chambers with their rescue units. They have their self-contained rescue units on and they have to change these units. And that's been a big question. This will allow the miners possibly to enter these chambers, exchange their units in a safe environment in a controlled area, then they can proceed on if they have the opportunity.

But in situations where -- if they have communication and to know that they can't travel any further, this will give them the best practical opportunity for

survival.

And we don't know what happens in explosions. We could have mine fires and different things like this. And I do believe this is going to enhance -- and I think that particularly with the breathable air holes and the compressor systems that we're already using in our mines and using the breathable air holes is in compliance, but having these self-contained units will keep your -- your supply. It will give you extra air to store for the self-contained rescue units for the miners that we have and it will just put the miner in a better situation for survival at this time.

And I think that this is some of the comments from our people in our mines. Thank you. Is there any other questions?

MS. SILVEY: I don't have any. Thank you, Mr. Green. Is there anybody else who wishes to speak?

MR. BLANKENSHIP: Good morning.

MS. SILVEY: Good morning.

MR. BLANKENSHIP: My name is James Blankenship, B-l-a-n-k-e-n-s-h-i-p,

president of United Mine Workers, Local 2245. I work at Jim Walter Resources Number Four mine.

I forgot one piece of paper. Excuse me.

Some of the questions I had today have been answered, and one of them was the air conditioned units that were approved in Canada and Australia. I was under the assumption they were used in the mining industry in those areas, which I found out today that they're not.

And the gentleman from MineARC, he talked about 80 degrees Fahrenheit in Alabama. Not at Jim Walter Four. We're in the 90 degrees, high 90s in some areas in that mine. The humidity inside those chambers would be 100 percent. We all know what the heat index would be. That's something we've got to really look at.

Pre-shift examinations, I definitely think that should be part of the rules because as we move, these units have got to be moved or got to be pulled out, they've got to be moved backed. And in the

mines they run up to it with a scoop, hook the track up to it, drag it down through there and put it back in place. They need to be looked at every shift, every pre-shift examination to make sure they're usable if we need them.

Training, we do the SCR swapovers in a room sitting in a chair and we swap over. That's my opinion. That's my -- that's my opinion. I know that's what's approved and what is to be done, but I don't think it gives me or the miner actually what's going to happen to him underground.

If we don't do training that's hands-on in a condition like they're going to have in an explosion with these chambers, then we're basically wasting time. So, I think that needs to be part of it. Not outside in the shop, not in a room. Underground in an area with a cap lamp with the lamp out, blowed out, whatever; Hollywood smoke, the whole nine yards. I think that needs to be part of the SCSR training, too, but that's another story for another day.

If we don't do that, it's like driving a car. You can study the book and take the test, the driver's manual and make a hundred, but you can't drive that car until you get behind the wheel.

You can know the evacuation plan inside and out. You can know it word for word, page for page, but if you don't do it hands-on, you're not going to know what to do when an emergency happens because you're not calm. Everything is happening around you. You're worried. You've got to be able to -- it's got to be instinct. You've got to be able to go up to that machine, turn the valves and know exactly what it is.

It's just like running the equipment underground. We've got mine operators that can do it with their eyes shut because they've done it for years. They know where all the levers are. They know what it is. We've got to have that same training.

The evac plans, that goes along with the training. We go over our plan regularly, but unless you do it, it doesn't

work. We've had an occasion at our location three times where our evac plan failed. Because we read it, everybody knew what it said, but when it came time to do it, humans took over. I mean, worrying and excitement and everything took over and it didn't work. We didn't get people out of the mines in a timely manner. We had to go back and get people. People made decisions that they weren't going to go where they were supposed to go because we haven't had any actual we're going to do it today and it's going to be out here and here's the training. That's got to be part of this rule.

We've got to make sure that it -- if we need them -- I hope to God we never do -- people know how to use them when they get to them. Thank you.

Now, with that said, we'll move right along.

Before today when I was given this thing I wasn't aware of any human testing on refuge chambers, but thank God for the Internet. I found out that there

was some human testing in 1993 and '94. A company called Rimer Alco did human testing on their -- I'm trying to think of the name. I lost the name of it now. Tommy Knocker refuge chambers.

They picked six people to go into a 10-man chamber. They picked people that were non-smokers, no medical, no medicine to take, people with normal heart rates, normal lung capacity. And I don't know about where y'all work, but that's not the people like me. They're like me. They're fat boys. And -- and ladies. I hate to say that, but they are. They take medicine. They smoke. They did that test for 24 hours and not 48 or not 96.

If we're going to do testing, I think we need to do it. It's got to be for the entire duration. It's got to be a mix of people, weight, whole nine yards and we've got to do it for the 96 hours.

You know, Strata Products came to Jim Walter Resources Training Center to give a demonstration of their product and to do a question and answer.

Ben Loggin was the chairman of our safety committee at that time. He asked the rep could we use the chambers in Alabama with our heat and humidity. The rep didn't want to answer, but he did. I give him credit for that. He said, it would be like getting in a death trap. The chamber wouldn't last 24 hours. And that's true. With the heat and humidity, we probably wouldn't get 24 hours out of it.

Jim Walter Resources in the meeting we had with mine manager Keith Shalvey informed myself and the safety committee that we were going to buy the Strata Products 25-man fresh air bay kit. I questioned him about it and knowing what we know about the humidity and the heat, he replied, I know we can't use them, but they comply with the letter of the law. It's a true statement. It does comply with the letter of the law, but it doesn't comply with the intent of the law, which is to make people safe, make the miners safe down there.

Mr. Shalvey also told me that he

would inform the miners not to use them, which I am too. I'm going to tell them don't get in that thing.

He said that if we had an individual hurt, couldn't get out of the mines or getting that individual out was a risk to other miners, that one person could probably get in that chamber and -- and make it, which I don't know. He might can. I have no idea about the one person, but that's still not the intent of the law.

I sent Strata Products three different e-mails asking them about their chambers and their powerless cooling system. I asked them how it worked, what temperature would it -- would it maintain if -- in the chamber, if the chambers were being tested in Alabama with our heat and humidity; and if so, when, where and what was the results. I have yet to have any response back from Strata Products.

I did some research on my own, and this is the question that got answered today. In Canada and Australia there's chambers with cooling systems, but I was

under the impression it was coal and they're not. I found that out today. This same company sells chambers in the United States and that was one of the reasons I was wondering. MineARC being one of them.

Back to the testing, the Rimer Alco -- I'm going to have to spell this. I'm not sure how to pronounce it. It's R-i-m-e-r A-l-c-o. And their research lab was Lac du Bonnet, Manitoba, Canada. That's who did the two -- the two tests, one in '93 and one in '94.

And again, the one in '94, they did it with the mine rescue team, which will have to be a little more physically fit than a normal miner. It's not a cross-section of the workforce.

Some of their criteria was they had to have, like I said, normal heart rate, lung rate, no physical -- physiological problems, no phobias. We've probably got people that's afraid to get in a confined space. We've got to deal with that. We can't say, well, you stand outside and you'll be okay. We've got take all that

into consideration when we do these tests.

In their tests it rates 100 percent humidity in less than one hour with the temperature of 20 degrees, 25 degrees Centigrade, which is about 75 degrees Fahrenheit. That's West Virginia temperatures. That's not Alabama temperatures. And I know because I worked in both places. I know what the mines are like in West Virginia.

Like I said, in Alabama it will be 90 degrees probably right now, you know, at 10:30 in the morning. And we all know the danger of heatstroke.

There's a -- I don't know if y'all have got this. A man by the name of Jim Dean from -- the director of West Virginia Mine and Safety Health Training. I've got a report that I think he sent to y'all and gave to y'all one time. And on his report on page five he says, "I am pleased to see that the proposed rule appears to grandfather state approved units to meet the requirements of the proposed rule. I would like to ask MSHA to consider

if there needs to be any difference from the West Virginia program. I understand why there may be a need to -- a need for specifications to accommodate for original ambient temperatures. That isn't a true statement. What works in West Virginia is not going to work in Alabama. There's no way on earth it is going to work.

And he asked to keep -- consider their model as a -- their program as a model for the nation. I don't. I don't agree with that statement. I don't want -- you know, we need to stand on our own. We need to be testing in Alabama. We need to do it right here in these coal mines where it's going to be used. It might work in West Virginia. I don't know. I wasn't part of that, but it doesn't need to be the model that we all go by.

And if you look on page seven of his report he says, on page 34157 of the proposed rule, MSHA states the Agency would require this training to exposes the miners to the expected heat and humidity conditions in the refuge chamber. And I believe that

miners should certainly be informed that conditions within the refuge alternative or shelter may be uncomfortable, but certainly not life-threatening and do not belive that exposing thousands of miners to some high unknown temperature and humidity is necessary or advisable.

I disagree with that statement, too. We've got to know what's in there. We can't just assume that that's okay. We can't tell an individual, well, you're going to be all right. It's supposed to be 135 degrees in there. They're not going to be okay.

We need to be honest and up front with everybody that goes in there. We need to make sure that when they get in that chamber that it's safe, that the temperature is going to be where they can last 96 hours to get to them.

And he said, how does MSHA know what the expected condition within the refuge alternative will be? The only way we can do that is testing. We can't assume anything. I know we can do figures and

graphs and charts and maybe be close, but we can't assume what's going on until we do it.

It says, based upon my understanding, a range of a temperature of X with a range of relative humidity readings of Y will result in an ambient temperature of 95 degrees Fahrenheit.

I just happen to have some index charts. To get a 95 degree heat, it would be 88 degrees with a humidity of 60. It's worse than that today outside in the street in Alabama. If you -- if you had a temperature X of 98, you have to have a humidity below 40 to be in the 95 range. At 98 and 40, it's 105 degrees Fahrenheit. And if it's 60 or 65, it's in the 128 to 134 range, which is dead according to the relative humidity chart, the heat index.

And I can give this to you, if you want it. Of course, it's on the Internet. Above 130 you're in trouble. You're in trouble, big trouble.

On page 145 in the middle column MSHA talks about 95 degrees Fahrenheit. It should not exceed that. Now, we need to

make sure that that happens, that it stays at that level, whatever it takes to do it to get to that level.

Now I'm going to talk about a few more things a little bit today.

On page 146, minimal spacing. NIOSH recommended 85 cubic feet, but the rules say 60 cubic feet. Look at me. I'm 300 plus pounds. I need that 85 feet. And three of my safety -- or two of them are the same size I am. They're pretty healthy. And that's -- a lot of workers in our mine are like that. We need the extra -- extra footage. We don't need to be cut down.

I know NIOSH says that's not a recommended -- recommendation not considered absolute, but they had a reason to get 85 feet. We shouldn't cut that down to 60. Make it 85 feet, cubic feet.

On our cage at the mine it calls for 65 people to get on that cage and go down. When I hired in in 1980, I was about 190 pounds. If 65 of us get on there, right now we're having to suck it up and get close because we're all a little bigger.

The same thing in that refuge chamber. We don't need to make it smaller. 85 feet is what we need; at least 85, if not more.

If you go to page 157 -- 156, 157, it talks about training and I think -- I gave the lady this disc. This is something I found from Queensland. It's a gentleman by the name of David Cliff and he works for Queensland. They actually went into the mines along with I think some of the industry people and everything and said we're here and you've got a disaster. Nobody underground knew that it wasn't true, so they could -- they could see how their program worked.

It's an 83-page report, but it was good. They had people actually -- they evacuated like they were supposed to. They had people actually -- I think it said 17 of them got in the chamber and stayed.

That needs to be part of this plan. That's something that needs to happen.

If you can plan -- if you -- like

we do our generator checks. If we know what we're doing and everything is laying there for you, you use it and that's it. Call me on the phone and tell me we've got a fire and tell me to go to it. That's a little bit different.

That's a good report and I ask you to look at it and play it and see if we can't incorporate some of that into our plans as far as training and making sure that when something happens we are best qualified to handle the problem.

Page 158 talks about distance from 1,000 feet to 2,000 feet on the working face or where equipment is being installed. You might as well take the 1,000 feet out. Because if you give an individual or an operator one or 2,000, it's going to be 2,000 feet. I'm telling you. I think it should be 1,000 as a maximum, not a minimum.

If you've got a shear operator on the tailgate and you've got a refuge chamber 1,000 feet out from that face, he's probably a half a mile from that refuge chamber. It needs to be closer. 1,000 feet should be

the minimum, not the maximum. It should be closer, especially on the longwall because on the tailgate that adds another thousand feet or so to it to get back to that chamber.

Something that affects me personally is the outby area. That's where I work. We need to make sure that we've got these chambers in locations where individuals can get to them reasonably.

I'll give you a good example. They don't need to be small chambers. I know some of the report talks about belt cleaners and all that stuff. Monday evening -- on Monday day shift our west A belt went down. West B didn't shut down. It gobbed out huge. We had about 25 or 30 people there working on that gob pile to get the belt running.

If we had a refuge chamber there that would accommodate what normally would be on that belt, which would be probably four or five people, and something happened, well, the best five would get in and the other 20 couldn't. We need to make sure

that we can cover all aspects of what's happening, what could happen. Because they even brought people off the section out there. They brought about five, six or seven of them off the section to help clean that mess up until we could get the belts back running.

If something would have happened, the toughest five would have got in the chamber and the weakest 20 would have stayed out is what it boiled down to. We don't need to say we'll put a chamber that's got -- that can hold four or five people. Because we change out the faces. The belt cleaners change out the same way on the main headers. So, you'll have more there during a shift change than you will during the regular shift usually. You need to keep that in consideration when you put this final -- final rule in the plans.

Also, you know, it gives you -- on page 159 it talks about -- it gives a company two -- two ways they can figure out where to put them rescue chambers.

One, they can do a test of

walking the people 30 minutes and all that stuff; or two, they can use the -- the diagram y'all have got in there, which is -- at our height it would be about 5,700 feet.

We did a test at our locations. I don't agree with how they got to it. We put our SCRs I think at 6,700 feet. They walked people 30 minutes and that's what they got. I don't personally think they did a cross-section of our work force. They did take women. They did take young and old, but I don't think they took people with bad knees and bad backs and stuff like that.

Our safety -- we had a safety committee member at that time, Jeremy Eaton, about 28 year olds. He didn't last 30 minutes to start with. He didn't get nowhere near 6,700 feet. Put a second one. He didn't last 30 minutes. He got about 3,500 feet.

I think we need to have a plan that says here's where you'll put it. Not leave it open for interpretation or whatever. If 5,700 feet is what you think it should be, that's what it should be, not

67 or 72 or whatever another mine site can do. We need to be uniform. We don't need to leave these rules open for interpretation. You need to say, here's what we're going to do and here is where we're going to put it.

Also, I don't think the rules should allow for any interpretation from any individual. And I'm talking about district managers. If there's something going to be done, it should be done in here. And the reason I say that is that one district manager in one district sees it this way and you'll have one in another district that sees it another way and we have no uniform system.

So, we should takes the reference of district managers out of this thing completely and go by what the rules say. Don't allow -- don't allow, well, because of such and such we're going to do this. Well, because -- we basically don't want to do what the rule says and we'll apply for a modification or whatever. We don't need to do that. We're talking about people's

lives.

I guess that's all I've got is to ask you to think about what you've heard today. Alabama is a different world than the rest of the coal industry due to our heat and humidity. What's going to work up north or out west is not going to work here.

And I will be glad -- I would be glad to get with these manufacturers and let's get our heads together with the industry and the operators and get rescue chambers that will work.

I'm also against building. I don't think that in the heat of a problem the individuals could get it built like it should be or get it built in time to protect them. I just don't think that's -- I think that's wrong in my opinion. I don't think it should be part of the rules.

And if you've got any questions, I'll be glad to try to answer them for you.

MS. SILVEY: I have a couple.

MR. BLANKENSHIP: I was afraid of that.

MS. SILVEY: Don't be afraid of

it because you figured it.

With respect to the space, we have gotten a lot of comments on the space requirement -- proposed requirement for the chamber, the 60 feet volume. And you mentioned the NIOSH recommendation in the NIOSH report, even though NIOSH said it wasn't hard and fast. I forget their exact wording, but something like that.

MR. BLANKENSHIP: Yes, ma'am.

MS. SILVEY: And you said that you believe that -- in that and even more. If you would, please -- and I -- because we have gotten -- and all you've got to do is read the transcript and probably ultimately look at comments. They -- they are -- they run the gamut when you start looking at them.

West Virginia, the state -- I won't say the state. The West Virginia task force members. Let me be specific. And even some of them said they were speaking on their own, but they did say they were going to submit comments before the comment period closed.

They made certain recommendations. Others have made other recommendations. Manufacturers have made certain recommendations. And so with respect to your recommendation today -- and you don't have to do it today and I suspect that the International is going to submit comments before the comment period closes, but if you would specifically include, as I mentioned in my opening statement, your specific rationale for your recommendation on the space. And if you could, you could specifically tie it to safety and health benefits for mines.

Now, mind you, I know you know this. I heard every word you said. So, I understood what you said. But if you would specifically -- if you would do that, then we would appreciate that.

With respect to what you said on -- Mr. Blankenship, on the distance, one of the things -- and I'll say this to everybody. You know, we -- and we're in this position and -- so, it's the position that we find ourselves in. We've got a lot

of -- often times competing comments and conflicting comments. On the distance we've really got a lot of comments there, too.

If you would -- but -- and you said on the distances that the -- I guess the thousand feet -- you -- you lean toward the lessor distance, if possible.

MR. BLANKENSHIP: As being a maximum.

MS. SILVEY: Right.

MR. BLANKENSHIP: And like I said, the longwall is a prime example. You've got the shear operator and -- and a longwall helper and there could be a mechanic or an electrician on the tailgate. That's at our place 1,0000 feet or more. And if you've got this 2,000 feet, then they're 3,000 plus getting back to it, which is over a half a mile to the rescue chamber.

MS. SILVEY: I think everybody knows that and that will be taken into consideration and not the recommendation in the NIOSH report. And I think we explained in the preamble that we took into consideration the refuge chamber and the --

you know, may -- may -- in the event of an explosion, may -- the possibility of it being affected by the blast and -- and a number of different things.

So, when you give your recommendation on the -- on the location -- and I did mention that in my opening statement, too. If you would put into your recommendation any and all factors that you think relate to the consideration of the location, that -- we'd appreciate that.

MR. EPPERLY: If you could speak to both sections, the developing miner section and the longwall, too.

MS. SILVEY: That's -- that's good, yeah. Because they may have different --

MR. BLANKENSHIP: I'll do that.

MS. SILVEY: Different, you know -- the earlier gentleman, Mr. Rau talked about performance oriented -- he may not have used the term "performance oriented". And you used it somewhat when you said -- when you used the risk assessment approach and you said Alabama

mines may be different than West Virginia mines.

MR. BLANKENSHIP: Definitely.

MS. SILVEY: So, see, what I find myself hearing -- and that is just so you all know what -- and I want to be a little humorous and say what an integral position we're in. I really think I'm in and -- but I'm just saying that. That's a little -- y'all bear with me. That's a little humor here.

On the one hand, we hear you say, you know, you want us to take us the risk assessment approach and we -- we recognize that. The mines are reflective of a whole lot of conditions, a lot of geographical conditions and a lot of other kinds of conditions.

And then on the other hand, sometimes you say but you want us to be prescriptive and tell you exactly what you -- you know, what you have to do.

So, to some extent we are in a position where we have to weigh and balance a lot of different recommendations and a lot

of different opinions. And that's why one of the things I've consistently said is when you give your -- your recommendation for you to be as specific as you can with respect to the rationale behind your recommendation.

MR. BLANKENSHIP: Well, let me make a comment then on the testing part. Once we do the testing, once we know exactly -- once we do it in one of these coal mines and the -- if the temperature and the humidity got too high, then, of course, if people get out of it, we will know that. We will know what they have to do.

At that point, after the test is done, then we could be specific. We could say here's what you've got to do because we know what is going to happen in Jim Walter Four and Seven. This is it. We know what -- we know what time we're going to reach 100 percent humidity. We know what it is outside. We know what it is underground. It's hot underground at Jim Walter Four. There's a place that will take your breath it's so hot.

We can do that, once we do the

tests. That's the key thing. Then we get the results. And then we can get rules and say, okay, Jim Walter Four, this is what you've got to have. Manufacturer, company, union, this is what you've got to have. We know because we've tested it here.

Mine equipment at two locations, some of it works -- some types work at Seven and won't work at Four and vice versa. So, the chamber needs to be the same way.

We've got roof bolters that we swap around and haul them back and forth like kindling wood because they wouldn't work at Seven but they would work at Four and vice versa.

The chamber is going to be the same way. We've got to make sure that it's specific to that mine site. We've got to do tests at those mine sites. We can't just say, well, because they tested it at Oak Grove mines, it's good for Alabama because we're different.

And once we do that, I can tell you exactly what we've got to have here or you can tell me because we'll know the exact

numbers and exact figures. I hope I got a little bit of your question.

MS. SILVEY: Yeah. And I'm sure I'll hear a little more from you all.

MR. BLANKENSHIP: Probably.

MR. EPPERLY: You mentioned there were three types of alternatives: Pre-fabricated, build in place and then the one I think you were referring to is built after an event.

MR. BLANKENSHIP: Right.

MR. EPPERLY: Is that the one you mean? You didn't mean the second one as build in place?

MR. BLANKENSHIP: Well, I don't know if the second one is build in place or be there to start with. I personally think that the ones -- the skids or the -- or the solid chambers is the best. I don't think the other two -- definitely not when you've got to build yourself after it happens is not realistic at all. It's not going to be good because there's going to be so much going on, dealing with injuries and worrying about getting out of the place and -- and I

just don't think you can build an area that would be safe to be in.

And the one that's pre-built, I'm not sure they would be there to start with, you know, if something drastic happened. I just don't feel comfortable with those two situations.

I feel more comfortable with, you know, the skid or the hard shell, hard shell.

MS. SILVEY: Mr. Blankenship, you made reference to several sources, references in your -- some of which as you recounted were Internet sites and I know we all have access to the Internet, but if you would please get -- provide those to us, we would appreciate it, the references that you cited. Because I think you cited a couple of reports and a couple of things from the Internet. So, you can either give those to us today or just provide them to us before the record closes. I'm sure the reporter got some of them, but just so we can make sure we are talking about the same thing.

MR. BLANKENSHIP: I'll probably

have to get the exact website to you.

MS. SILVEY: Okay. That will be fine.

MR. BLANKENSHIP: This -- everything should be on here about this website.

MS. SILVEY: We appreciate that. Okay.

MR. BLANKENSHIP: Thank you.

MS. SILVEY: Thank you very much.

At this time, should we take a 10-minute break and come back? Let's take a 10-minute break. 10 minutes, please.

(A break was taken at 10:54 a.m. and the hearing resumed at 11:16 a.m.)

MS. SILVEY: Okay. We will now continue the Mine Safety and Health Administration's public hearing on the Agency's proposed rule for underground coal mines for refuge alternatives for underground coal mines.

And our next speaker will be Tom Wilson with the United Mine Workers of

America. Mr. Wilson.

MR. WILSON: Thomas Wilson, United Mine Workers of America, International Union.

I rise in support of refuge alternatives for underground coal mines.

With that said, we must encourage that MSHA direct this towards air conditioned refuge chambers. Not only does this proposed rule not provide for air cooled chambers, but I believe there are other areas where the proposal also demonstrates a lack of understanding for a problem with the temperatures.

For example, on page 334145, the middle column, it states that MSHA recognizes that body heat and heat generated by chemical reaction; i.e., CO2 scrubbing chemicals are inherent heat-producing sources within a refuge alternative. The ambient temperature in a refuge alternative also is affected by the mine temperature compounded by high humidity in a sealed environment. High humidity reduces a body's ability to regulate temperatures by

sweating, which could result in a dangerously elevated internal body temperature.

Later on in that column it says, MSHA requests specific comments on the apparent temperature and mitigation of heat stress and heatstroke. I believe there's a recognition that there's a serious problem with temperature in these chambers, but at the same time, there has a been a reluctance to require the fix, which would be air conditioned chambers. We seriously need air conditioned chambers in the mining industry.

Also, in all cases we need cold packs to be required to help treat for heat stress and heatstroke. I'm not just talking about the -- the few that would be in the first aid kit. They need to be analyzed as to how many man unit it's going to be and for how long they're planning to stay and you need to up the supply of cold packs in these chambers.

Another example would be on page 34146, again, the middle column where MSHA actually downsizes the space that's required

for a rescue chamber. I definitely oppose downsizing. That is directly related to heat. And the larger is better as far as controlling the heat. So, under MSHA's scenario of the 60, that just complicates the heat -- heat problem even more. So, I would ask that MSHA would go back and review. And again, larger is better.

On page 34142 of the proposed rule it states -- and this is in the middle column -- refuge alternatives that states have approved and those that MSHA has accepted in approved ERPs would meet the requirements of this proposed rule. I disagree with that, and I want to discuss briefly some of the things I've seen in inspecting what's -- what's been put in place to try to comply with this rule.

I was at a mine last week and walked up to an emergency supply box that came up to here (indicating) on me. It took both hands to open the lid on it. Once I opened the lid, there was no latch or device to hold the lid open. A man virtually had to stay there and hold it.

You couldn't reach in for any supplies because you was holding the lid. Most of the supplies were out of reach. Even if you tried to bend over the top of the box, you couldn't get to the bottom of the box to get the supplies out. The supplies were not organized. It is just a huge metal box built out in the shop and the supplies thrown in it to try to comply with the law -- or to try to get by with complying with the law.

I've gone to these and -- where they're actually drilling in some of the Alabama mines. And one thing that has to be considered that I don't believe is at this point -- I've seen drill holes that's missed the crosscut that they were supposed to be in. They haven't totally missed it, but the drill hole was exactly where you needed to build the wall at. And it was because they had driven the entry off and they had to go back and slab it.

So, actually by not having a requirement as to where that hole is at in that crosscut or the proximity for that hole

in that crosscut, you're going to allow for non-functional alternatives in this proposal.

There was no site preparation. And I'm going to get -- get into that more late -- later, but some things that would have been beneficial had they had to use that crosscut is simply to scoop -- just simply dumped that huge metal box and -- in a crosscut that's got a hole in the top and that's it. No site preparation whatsoever. I've also seen those crosscuts where the supplies are dropped off as being previously used as rest rooms.

And this is currently what the industry is doing, and I would encourage that the emergency rule be better refined so that after this becomes effective, those are not the type of scenarios that we're dealing with.

Refuge alternative components that require on-site construction should be eliminated from these rules. During an emergency, the miner first off is basically in shock and going through a lot of trauma.

He then exhausts himself from trying to escape checking out all his different alternatives. Then he has to return to the shelter. And at that point he's under great stress. That's not the time to start breaking out the tools and constructing a chamber. And we shouldn't even expect a man under those conditions to perform that task. This approach is wrong and I would ask that you eliminate it from the rule.

There's some scenarios that I'm not sure are covered by the rule, and I just want to lay out these scenarios and -- for the panel to consider. And I think we've heard one previous speaker talking about when a belt header gobbed out. It is not uncommon in Alabama mines to have large underground construction projects going on. We've got several of those scenarios going on right now as we speak.

I know the language does say where mechanized mining equipment is being installed or taken out, but I'm not really sure what the legal definition of that is, whether that's a working section or whether

it's outby and you're building a major bunker project and have a large, three shifts a day construction company underground building that bunker project. To not cover those types of scenarios is wrong. And that is a common thing in the industry.

Another scenario that is present in some of the Alabama mines is outsourcing of work. That's where you take any section of what's normally required as far as continuing production and outsourcing it to a different company. Those guys aren't working for the coal company. They're working for an individual -- their individual boss.

Those guys go in and -- wherever the project may be and are required -- and they're large numbers, too. We're not talking one or two additional folks. We're talking a large number crew going in and having to do this outsource work.

I think any company that's doing outsourcing of work must demonstrate how they're going to equally apply and provide

this protection for their miners. Because if we don't -- if we don't address the outsourcing problem -- I think James said it while ago. The biggest men are going to get in the chamber. The rest are going to die. And that's a serious concern that needs to be addressed in this rule. As I read the rule, I didn't believe that either one of those scenarios were covered.

I know that this panel has previously received comments that instead of 96 hours it be reduced to 48 hours. I'm in favor of the 96 plus hours for these rescue chambers. And one of the specific reasons -- from a rescue and recovery perspective, putting a 48-hour clock on rescuers on a command center will definitely lead to improper decisions. So, I strongly support the 96 hour plus time for a rescue chamber.

I too have read the comments suggesting that the West Virginia model should be the model for the country and I disagree with that. I don't think the West Virginia model works for -- for Alabama. I

don't agree with the 42 hours. I believe that rescue chambers should be placed in crosscuts to minimize the direct forces from an explosion.

Also in the West Virginia comment, the commenter stated that one of the reasons for West Virginia deciding to go to -- my understanding of his comments, one of the reasons for deciding to go to the 48 hours, since the tragedies in West Virginia, they had seen an increase in the number of mine rescue teams and ultimately can provide a faster response, a 48-hour time frame response.

That's not the case in Alabama. We've got an unusual mine rescue scenario currently in Alabama where over the recent years we have not seen an increase. We've seen a decrease in the number of mine rescue teams. There's four mines, three of them being non-union mines in the state that's covered by the two state teams. And those state teams routinely travel to competitions, which I know by the letter of the law is legal and they don't have to

have mine rescue coverage during competition. But it exposes the miners to a much longer time period of being able to respond to a mine rescue emergency.

As of today, this is August the 7th, the mine rescue teams for the Drummond Coal Company, Warrior Investment, Corinth Mining, Shelby Mining and Tacoa Mine -- minerals are all out of state in Virginia at mine rescue contests. That will again occur at the last of the month from August the 25th through the 28th, plus travel time.

So, that's an additional reason 48 hours is just an unreasonable time for rescue chambers. We need at least 96 plus hours in those chambers.

Some areas that MSHA asked for comments: On page 34145, the third column it states, "MSHA requests comments on including a requirement that refuge alternatives be designed with a means to signal rescuers on the surface." I guess my comment on that is as long as it doesn't slow down the implementation of good

chambers into the industry, that would be a nice feature to have.

The next paragraph MSHA requests comments on including a requirement that the manufacturer design refuge alternatives with a means to signal underground rescuers with a homing device. Again, as long as it doesn't slow down the process of getting rescue chambers in the mining industry. I don't know -- it would be interesting to hear from manufacturers on how difficult that would be and whether it would cause any delays.

With that, I'll take any questions the panel may have.

MS. SILVEY: Thank you, Tom. I have a few comments and I'm not sure I have any questions, but we'll see.

With respect -- just -- just one minute. Bear with me one minute.

I have a few comments to make and these comments go not just to you, Mr. Wilson, they sort of go to everybody in here.

The first -- because you

mentioned a few things like the device -- now I'm starting at the end, the last thing you said. We asked for comments on whether there should be some device designed where you could signal rescuers -- rescuers on the surface and alternatively where -- a device also where the mine rescue team could signal the rescuers underground.

One of the things I want to ask -- and I guess this is particularly directed to the manufacturers because, as you said, this -- and to see if that -- if those two types of devices that we talked about in the opening statement, the -- the refuge chambers that you all are either, one, in the process or you've already designed, if those types of devices are -- could be -- are they, one, included on the chambers that you have; or can they be expected to be included on chambers that you are in the process of designing?

So, I think that probably more appropriately -- that question probably more appropriately goes to the manufacturers. So, if you all would please

address that question.

The second thing I want to say is -- and you know, I might even say this again before we close the record. The issue of temperature, you all know we -- and we proposed a requirement for internal apparent -- inside apparent temperature.

The issue of external ambient, the mine temperature, if you would please -- and I'm asking everybody, manufacturers, operators, miners alike; states, if a state happens to read this transcript and hear that, if you would please include -- if you have a suggestion on that issue -- one, a suggestion on it; two, if you could be more specific, a suggestion on how -- what MSHA should -- how MSHA should address it, what MSHA should do with respect to it, to that issue; three, your specific rationale for your suggestions.

Now, that might be asking you for a lot, but I'm -- I'm putting on the record and putting on notice -- putting people on notice that we would like, if at

all possible, if you could address that before the comment period closes on August the 18th.

With respect to your comment, Mr. Wilson, that MSHA downsized space, I'm -- I'm going to fill in the rest of your comments and read between the lines. And I assume that you said MSHA downsized space -- and I think maybe Mr. Blankenship spoke to it -- because we used 60 cubic feet as opposed to 85 cubic feet in the NIOSH report.

I couldn't -- I didn't --

MR. WILSON: Yes, ma'am.

MS. SILVEY: -- understand how we downsized space otherwise. But I'm going to say the same thing to you that I've said to everybody else and that is -- you said larger is better. But if you would please -- with respect to a specific recommendation, if you would please include safety and health benefits for whatever recommendation that you make if you make any additional comments to us before the record closes.

You made a few comments, Tom, about the emergency supply boxes and the drill holes and the site preparation. You know, some -- some that were going on in your mines -- at least maybe in one of the mines that may not have been sort of up to specifications. And I guess I just want to ask with respect to them, did you all -- did you all complain about them to the operator?

MR. WILSON: We had discussions about it.

MS. SILVEY: You had -- okay. That's a better way of putting it. Did you have discussions about it? So, were things resolved then?

MR. WILSON: No, ma'am.

MS. SILVEY: Oh, well, okay. I was looking for yes to that one. But anyway, that's all right. Okay.

So, you all are in ongoing discussions on that, I take it. Okay.

The next thing I wanted to comment on was with respect to the size, and you talked about certain things that go

on in the mine and you had some concerns about where mechanized mining equipment is being installed or -- and that was -- or installed or removed. As many of you know, in terms of a definition of the word -- that was included -- we included that in terms of structuring the capacity for inby refuge alternatives. And it was supposed to include where people are working in the working section or where mechanized mining equipment is being installed or removed. That size is supposed to be taken into consideration to accommodate those persons just so -- and that's clear to everybody. That was our intent. And I think that was pretty clear in the -- in the proposal.

And then you talked about the -- okay. That's what I -- and we also talked about -- you talked about a lot of outsourcing in Alabama mines. And we also said that -- that the capacity should be enough to accommodate persons working near the sections and we included surveyors, vendors and so -- and other persons who work near the section.

So, I think we put it -- we did talk about accommodating persons working -- I think we -- we talked about accommodating all of the persons you just spoke -- you spoke about here today and if you read in the preamble, we did speak about those people.

I think that's all I have. Those are all the comments I have right now. Do you have anything?

MR. EPPERLY: No.

MR. WILSON: Thank you.

MS. SILVEY: Wait a minute. Just a minute.

All right. Thank you.

At this point, does anybody else wish to make any comment?

(Mr. Rau raises his hand.)

MS. SILVEY: Okay. Mr. Rau. Wait. I'm sorry. Before I take you, Mr. Rau, I knew I had -- I saw you, believe me.

Mr. Byram, could I ask you to please come up for a few minutes? I have a few more comments I have to ask you. Then

we'll take you, Mr. Rau.

It dawned on me, Mr. Byram, after you finished your testimony -- if you don't mind, I wanted to further ask you about the borehole situation that you all have. And if you would just explain to me a little bit about where you have -- right now do you have them in terms of providing, you know, either breathable air or a source of refuge; where you have them, any issues -- and just the conditions under which you have them, any issues associated therewith or anything like that, if you would, please.

MR. BYRAM: We have one that's located in our Number Four mine.

MS. SILVEY: One borehole now?

MR. BYRAM: One borehole. It's in a -- into a waiting station that's located near an exit point for the mine, an emergency exit shaft. It's large enough to accommodate a large number of employees. It has food, water, first aid equipment and things like that.

In our application with the

terrain that's over our mines and the depth of our mines, it's not feasible for us to use that option of being able to drill within 48 hours to reach a certain point. One, you -- you have to look at the terrain. You also may have -- as the mines progress and expand, you may find yourself under a slurry pond or a lake and there's no way to drill through that given point. The --

MS. SILVEY: But the --

MR. BYRAM: Ma'am?

MS. SILVEY: I'm sorry to interrupt you.

MR. BYRAM: That's okay.

MS. SILVEY: But that one borehole that have, you don't think -- you don't see the possibility of advancing it, of moving it?

MR. BYRAM: You can move and set up another borehole, but when we try and look at the reg in a timely manner, looking at what's best for the miner and how expedient we could get to and use that as an option, there is -- I do understand that

there is a mine in our state that uses that as an option. But it won't work for us.

It takes us -- it could take us 24 hours to just reach and prep a site; and then the 2,000 feet to drill, we could not get to them in 48 hours to provide breathable air. For us it's just not an option. It's -- it's a good adjunct where it is and we plan on looking at making more but not to comply with the law.

MR. EPPERLY: Did you consider extending the pipe underground from the borehole?

MR. BYRAM: We had discussed that, but you have to be able to protect the pipe and that's another challenge in itself.

MS. SILVEY: Okay. I appreciate you coming back. I wanted to get a look at -- a better understanding of how that was at least currently being used. And if any other operators are in this audience or miners for that matter and you have any additional comments on the boreholes, if you would provide those to us before the

record closes on August 18th, we would appreciate that. Thank you.

Okay. Mr. Rau.

MR. RAU: Thank you, Ms. Silvey.

Just quickly going back to what Tom was saying and also the question you asked in regards to ambient temperature, is it possible just thinking outside of the box here to put a subsequent request for information to accompany this which asks mining operations around the U.S., specifically all coal mining operations to collect temperature data for use in terms of determining what these specified ambient temperatures should be?

I'm sure it would only take a matter of moments to send a guy down on a shift to the face, have him record with a monitor dry-bulb, wet-bulb convection and have that information sent back to MSHA so you can get a database of what the actual temperatures are in various states.

MS. SILVEY: The answer -- the short answer to that is yes. There's -- you can always do, you know, a lot of

things. And there may be alternative ways we can get information on ambient temperature -- mine temperatures for mines in the U.S., underground coal mines in the U.S.

So, recognizing, as I've said to everybody earlier and I'm going to say that again one more time, that we are required by law to issue this final rule by December the 31st. So, to some extent we do have some constraints on us, but we are going to try to deal with the best data framework that we can have.

So, whatever information people would like to send in to us that relates to this issue, we will be more than pleased to get it and then we will just try to reach out and address this. And as I said earlier, any ideas that you have will be useful.

And that was an idea, but the thing -- the issue with doing an RFI -- an RFI is a regulatory document. And so you have to put a time limit -- you have to put it in the Federal Register in a -- with a

time constraint period on it and that type of thing.

So, there may be an alternative way of doing it that we can deal with addressing this issue, but we appreciate whatever ideas that people have.

MR. EPPERLY: Foster-Miller in their docket has information in a December '07 report related to ambient temperatures in different regions throughout the country. So, you can comment to those, too, or everyone in the U.S. can comment to those numbers that are in a chart, in a table.

MR. RAU: I've actually -- I've spoken to Greg Campbell who collated those results. And in most instances -- for instance, in West Virginia the information came from three mines and that's it. So, it wasn't really a representative data.

I mean, I'm hoping that the mining industry here would reach out and say, you know, this is important and provide -- I'm not sure what the stipulation is here, but typically in

Australia we do quarterly ventilation surveys, particularly in the hotter months. So, you're in that period right now. There's probably mining companies around the country doing ventilation surveys as we speak and it would simply be a matter of them providing that information.

MS. SILVEY: I think we probably have the wherewithal to get some of that -- most of that information.

MR. RAU: Thank you.

MS. SILVEY: Thank you. Does anybody else have any comment -- additional comments that they would like to make?

(No response.)

MS. SILVEY: Anybody else?

(No response.)

MS. SILVEY: If nobody else has any comment or testimony that they would like to provide at today's public hearing, then I would like to say on behalf of MSHA and our acting assistant secretary that we appreciate very much your attendance here today.

For those of you who came and did not make a comment, we appreciate your interest in the public hearing today. For those of you who did testify, I want you to know how very much we appreciate that. And for those of you who testified and promised additional supporting material, we look forward to getting that before the record closes on August the 18th.

At this time, there being nobody else who wishes to comment, I'm going to conclude the Mine Safety and Health Administration's public hearing on the Agency's proposed rule on refuge alternatives for underground coal mining. Thank you.

END OF PROCEEDINGS

(The MSHA Public Hearing concluded at 11:55 a.m.)

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C E R T I F I C A T E

STATE OF ALABAMA)

JEFFERSON COUNTY)

I hereby certify that the above and foregoing hearing was taken down by me in stenotype, and the questions and answers thereto were reduced to computer print under my supervision, and that the foregoing represents a true and correct transcript of the deposition given by said witness upon said hearing.

I further certify that I am neither of counsel nor of kin to the parties to the action, nor am I in anywise interested in the result of said cause.

_____

Dana Gordon, Commissioner
ACCR #146