

# COAL MINE SAFETY IN CHINA: CAN THE ACCIDENT RATE BE REDUCED?

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## ROUNDTABLE

BEFORE THE

### CONGRESSIONAL-EXECUTIVE COMMISSION ON CHINA

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

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DECEMBER 10, 2004

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Printed for the use of the Congressional-Executive Commission on China



Available via the World Wide Web: <http://www.cecc.gov>

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U.S. GOVERNMENT PRINTING OFFICE

97-797 PDF

WASHINGTON : 2005

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# CONTENTS

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	Page
STATEMENTS	
Feickert, Dave, consultant in industrial relations, ergonomics, and energy, Sheffield, U.K. ....	2
McNestry, Peter, British Coal Health Claims Monitoring Group, European Safety and Health Commission for Coal and Other Extractive Industries, Goole, North Yorkshire, U.K. ....	5
Carey, Leo, executive director of government services, the National Safety Council, Washington, DC .....	9
APPENDIX	
PREPARED STATEMENTS	
Feickert, Dave .....	28
McNestry, Peter .....	32
Carey, Leo .....	33



## **COAL MINE SAFETY IN CHINA: CAN THE ACCIDENT RATE BE REDUCED?**

**FRIDAY, DECEMBER 10, 2004**

CONGRESSIONAL-EXECUTIVE  
COMMISSION ON CHINA  
*Washington, DC.*

The roundtable was convened, pursuant to notice, at 10 a.m., in room 2255, Rayburn House Office Building, John Foarde [staff director] presiding.

Also present: David Dorman, deputy staff director; Susan Weld, general counsel; Patricia Dyson, senior counsel; Carl Minzner, senior counsel; and Keith Hand, senior counsel.

Mr. FOARDE. All right. The magic hour has arrived and I think we should get started. We have always tried to start on time and end on time at our Issues Roundtables, and we want to continue that very healthy practice.

First of all, on behalf of Chairman Jim Leach and Co-chairman Senator Chuck Hagel of the Congressional-Executive Commission on China, welcome to this Issues Roundtable about coal mine safety in China.

When we first started looking at these issues and got interested in them, we decided to try to arrange a roundtable on this topic. We have been trying to get our distinguished panelists and experts here for some time, and this week was possible for them. We had no idea that the topic would be so timely. The accidents in China of November 26, and we just heard that there has been another one in Jiangxi Province today where there was heavy loss of life, makes this a particularly opportune moment to get into these issues.

The increase in fatal coal mine accidents in China has been of concern to our Commission members, and the burgeoning rate of fatalities appears to be the result of an exploding demand for energy in China and the growing desperation of farmers, driven by poverty, to seek jobs underground in small, dangerous, mostly private coal mines.

Official government statistics tell a grim story of workers injured and killed in coal mines. Figures released in June 2004 show that over 6,000 miners died in 2003. An expert at the Chinese Mining University estimates a national rate of 12 fatalities per million tons of coal mined. As of October 30, some 4,153 Chinese mine workers had lost their lives, and then we had the very heavy additional fatalities since then.

The Chinese Government has some control over safety standards in large, state-owned coal mines, but virtually no control over small, private mines where most of the fatal accidents occur.

The Chinese people are increasingly aware of the appalling death and injury toll, but one Chinese expert expressed the view that it would take decades before China reaches the safety levels of the developed world.

Given this background, we wanted to look into the question of how foreign countries with advanced safety standards, and international institutions such as the ILO, could help Chinese authorities improve coal mine safety. We are particularly pleased to have two experts from the United Kingdom who have come a long way to share their expertise with us.

We have had foreign experts—that is, non-U.S. experts—at previous Issues Roundtables and hearings in the CECC over the last three years, but I think you two may have the record for coming the longest way.

Our panelists are: Dave Feickert, who is a consultant in industry relations, ergonomics, and energy; Peter McNestry, who has served on numerous British, European, and international coal mine safety boards; and Leo Carey, who is the Executive Director of Government Services for the U.S. National Safety Council here in Washington. I will introduce them at somewhat greater length before they speak.

As in the past, each panelist will have 10 minutes to make an initial presentation. When all three panelists have spoken, we will go to a question and answer session from the staff panel here, giving each staff member about five minutes to ask a question and hear the answer. We will keep going until we have exhausted the topic or until 11:30 arrives, whichever is first.

First, then, Dave Feickert. Dave is a native of Sheffield in the United Kingdom and has served as a representative of the Trades Union Council to the Economic and Social Committee in Brussels, where he worked closely with the European Commission, the European Parliament, the Council, and other European organizations. He has been a representative on the European Coal and Steel Industry Consultative Committee and has conducted seminars on health and safety for mine workers in the Czech and Slovak Republics. His most recent publications include articles on the international coal market, mine privatization, and a paper on “Miners, Safety and the Technological Revolution” at a safety conference in Lancashire, U.K.

Welcome, Dave Feickert. Thank you very much for being here.

**STATEMENT OF DAVE FEICKERT, CONSULTANT IN INDUSTRIAL RELATIONS, ERGONOMICS AND ENERGY, SHEFFIELD, U.K.**

Mr. FEICKERT. Thank you very much, Chair. We are very pleased to be here. It might seem a long way to come, but this issue is extremely important and something we are discussing on a quite wide basis, not only in Europe, but also internationally. International trade unions are particularly concerned about the situation with the coal industry in China.

I would like to make three points. Let me just briefly mention them by way of summary. The first point is that China produces one-third of the world’s coal, yet has over 80 percent of the fatal accidents of the world’s coal mining industry. That is a figure that

came from the Chinese Mine Safety Administration. They know what the situation is. They know how serious it is. They know it is creating considerable difficulties of all kinds.

I think our interest is really one of common humanity: how can we help to solve this problem? Our industries have gone through, in Europe, and yours has as well in the United States, long periods which have similarities, way back in time, so we have a lot of experience as a result.

The second point is that, because we have been through that, should China have to go through it? Should the Chinese industrial revolution that is taking place at the moment have to take the same shape in terms of the cost in coal mining of human life when it is no longer technically necessary? In other words, there are solutions that are available if we could only coordinate our efforts to help the Chinese.

And the third point I want to make is that this issue is a vital one for strategic energy reasons. This is not just a question of health and safety at work, not just a question of one industry, it is a question of global energy demand and the balance of demand in the future.

The speed of growth of the Chinese economy is so fast and the demand for energy is so great that China will be producing much more than its current 1.7 billion tons of coal a year. It is increasing its rate at about 15 percent a year. Nobody quite knows where it is going to end, because coal is China's main energy source. If they do not mine coal, they will buy oil and they will buy gas off the international markets, and the prices of oil and gas will rise correspondingly. One of the factors in the recent oil price shock—I think we can call it that because the price of oil has stayed high for some period of time—was Chinese energy demand. It does not take very much imagination to see that if China reached the same standard of living as Western countries, then their energy demands—well, it is a bit difficult to calculate that figure, and I have not even tried.

To come back to the main point, Chinese coal production has expanded enormously in the last few years. If it is going to continue at the rate it is, it will continue to be based on the three groupings of mines, the three types of mines that they have.

There are a large number of small village mines that are really unsafe. There is no question about that. In your remarks, Mr. Chairman, you mentioned that. Then there are the county mines, which are somewhat larger, and the safety record is better.

Finally, there are the large, highly mechanized mines. Rather ironically, some of the mining technology from closing British mines has been exported to China, so we know that they have access to some pretty good gear. That is the balance of the industry.

Given the demand for energy and for coal, it is unlikely to change very much. They are not about to close all their small mines. They certainly are not going to close their medium and large mines. There will be more of them.

They have recently decided to concentrate coal production into 13 different production groups. So the effort is to try to rationalize it, which they can do with the large- and medium-sized mines, but once again, rather difficult for the small mines.

Now, what are these small mines like? Well, the best comparison, I think, is with the kind of mines that first developed in Britain in the 18th century. They were known as bell pits, mined locally where the seams were outcropping, coming up to the surface. As they took the coal nearest to the surface, then they dug deeper and deeper, and they dug straight down and created bell-shaped pits. They were not very big, but they took the coal. Of course, if they took the bell shape out too far, the roof collapsed and they were killed. Well, that is happening in China. They also get flooding in China. Flooding is a particular problem in some of the small mines, especially the drift mines which go into the hillsides. So, there are particular issues there. As has been our experience in the U.K., the smallest mines have traditionally been the least safe. They are the most difficult to organize from a safety point of view.

In terms of statistics, Mr. Chairman, you quoted the fatal accident rate. I expect that the Chinese recognize that that represents 80 percent of the world's fatalities in the coal industry. But what is very important to add to this figure is that the normal ratio for most coal industries, that is, the major industry accident rate, is about four to five times the fatality rate. This is in some ways even more serious because you are talking about maybe 35,000 people each year who are not going to work again, and they could be quite young. What level of support do they have? We know that the old social model is changing. It is gone, basically, in many parts of China, and they are trying to establish a new one. They are working with the European Union to set up a new Social Security system. That is very much the topic of the day. They have not solved it yet. There is this huge problem of compensation and they do not have a proper compensation system of the kind that we would recognize, but it also took us a very long time to develop. So, that issue is a very important one from the point of view of safety.

The other point I think, in relation to accidents, is it is difficult to place China's development in a historical sense, by comparison, say, with the development of mining in the U.K., because the U.K. was one of the first, and it went through this whole process. Miners died in the thousands. Over 100 thousand have been killed in British mines since records were first kept in 1850. I try to get that across to people by saying, well, just think of what size of industrial towns that group would have represented as a population, and their families. You are talking about over a half a million people, probably more, as families were larger in those days. But that is what we went through. The accident rate that we had in the early part of the last century, when over 200 million tons were produced, is very similar, or was very similar, to the current Chinese accident rate.

Now, we would rather prepare a measure of accidents measured by 100,000 man shifts, or job shifts, rather than tonnage, because the tonnage measure is not a very accurate measure. It gives you an indication. But that is what we have to play with.

The last point on safety, then, is that on the basis of our experience, we would say that we have developed, over a long period of time, a well-structured safety system based on the role of worker safety representatives, pit safety supervisors, mines inspectors, and



well-qualified mine managers, and a safety culture that was built up.

The last point in the last minute: what can we do about it? Well, the most promising development took place early this month when the International Chemical Energy and Mining Federation worked together with their corresponding members of the mining corporations and the ILO, and they reached an agreement in Beijing with the Chinese authorities, the industry, the unions, and so on to set up a safety system. What they are going to do is make a complete appraisal of the variety of problems that exist in the medium- and large-sized mines before going to the next stage. I think that is the most promising development. There are a number of others. It is really important that our governments get behind that kind of initiative because it is a problem of such a scale that it requires a considerable level of political support behind it. Thanks very much.

[The prepared statement of Mr. Feickert appears in the appendix.]

Mr. FOARDE. Dave, thank you very much. You have given us a lot to think about. We can come back to some of these questions in the Q&A.

I would like now to recognize Peter McNestry, who has served on numerous British, European, and international coal mine safety boards and committees. In the year 2000, Peter was a member of the United Kingdom UNESCO National Commission, and before that he served with the British Coal Health Claims Monitoring Group. He has also served on the Safety and Mine Research Advisory Board, and the European Safety and Health Commission for coal and other extractive industries.

Peter currently lives in Goole, North Yorkshire, and has come a very long way to Washington to help us this morning. Thank you very much.

**STATEMENT OF PETER MCNESTRY, BRITISH COAL HEALTH CLAIMS MONITORING GROUP, EUROPEAN SAFETY AND HEALTH COMMISSION FOR COAL AND OTHER EXTRACTIVE INDUSTRIES, GOOLE, NORTH YORKSHIRE, U.K.**

Mr. MCNESTRY. Thank you, Mr. Chairman.

In earlier discussions, we considered how best to approach this and recognize the eye-catching possibility that explosions in mines were a major problem. It would have been wrong to say we were not used to it, because historically in the U.K. we went through this. So we thought, well, can we look back and see how we progressed? How did we get out of this situation? What did we put in place to resolve the situation?

I do not intend to read my statement, Mr. Chairman, but I would like to go through these tables. I believe you have got them. If you could look at the table which starts—and I do not know in what order you got them, because I think we e-mailed them across. The first records of explosions in the U.K. were in the 1860s. There were explosions before that, but proper records were not kept. In the 1860s, we were not sure how many men worked in U.K. mines. Records were not that good. But you can see, it crept very high, until 1910. We put this in periods of decades.

Over that period of time, there was a lot of motivation by people, mainly churchmen, mainly Methodists, to get involved. A lot of lob-

bying took place with politicians. Then every explosion that occurred was investigated by an official inquiry, sometimes by a commission, usually by an army major or an army captain. Decisions were taken, a report was made, and that report found its way through the system, and changes were brought about. My concern was determining, when we looked at this, how long it took for the explosion to occur, an investigation to be undertaken, and a solution to take place, and it was usually one to three decades.

We do not see the need for that now, because we have the answers. Along with this table, we itemized the different types of causes of explosions. We do not have that information from China. We just have official reports that “an explosion occurred,” usually a gas explosion, but it usually means that it was a coal dust explosion, because the gas explosion was the initiator. But in this folder we describe all the reasons, if you want, for an explosion. There is unlikely to be any more, because we in the U.K. have experienced this. There are different sources, but we sought to remove them.

In this table as well, recognizing the toll, it was a “belt and brace” approach. When we learned there was a problem, it was investigated, and then brought about a solution. The “braces” were that we designed systems so when it did occur, then the majority in the mine had a chance to escape the effects. This brought about a practice of having two means of egress, a single means of egress was no longer allowed, other than the initial driveages, so every working place had two ways out. So if one area was blocked, another area was open. That was a simple one. Another safeguard was the use of stone dust barriers. When an explosion occurred on a working face or development, a stone dust barrier was created. The heat did not pass through the area of the stone dust barrier. The heat creates the blast when it hits the next junction—the coal dust is lifted and a chain reaction takes place.

So these stone dust barriers were simple. It was really cost-effective, and did mean—and you can see it in this graph later on—there were a significant number of explosions, but a much-reduced number of deaths because large sections of the workforce could then escape.

Probably the final scenario on that was the use of self-rescuers, which came into practice in the 1970s. This was a small box which the mineworker had on his belt. In it were crystals which, when you removed the seal, a man could breathe for up to one hour in comfort, one half-hour with some discomfort, which would give him enough time to get out or get to a safe area in the mine.

We are not sure exactly how far the Chinese are on this type of technology. We do know from managers from England who have gone out and installed systems that the state mines are well run. People there are keen to see the systems work, and work safely. We have little information about the village or the municipal mines, as the Chinese call them, and the mines without license. We fear that proper safety practices may not be the case in those mines.

On the itemized part, can we just go through the causes? On the first one, there is only two explosions, where the cause was not proven. This was at the early stages when the experts, if a mine

could not be reentered, could not define what had happened, so they had to be honest and say “these causes were not proven.”

We then come to the naked flame explosions. I guess some of these are also what happened in China. There is a difference in a naked light mine and a safety lamp mine. Safety lamp mines were initially deep mines.

In the United States, you do not have the same problems we do in the U.K. because you have extensive reserves, and when there is a lot of gas about you move to another area, another part of the country, and another part of the valley. You move the mine. But we worked with this problem. In the 1880s, 1890s, and we had significant numbers of deaths caused from candles, from matches, from naked lights.

In the U.K. we moved on from the naked lights to what we used to call safety lamps. That is the graph entitled “Flame Lamps.” Flame lamps were intended to be a safety lamp, but in the beginning they were not really all that safe. There was a single gauze around the lamp. The mine workers did not like them because they did not give the amount of illumination that a candle would, so things were altered, lamps were improved.

This type of lamp developed into being what we know as the flame safety lamp, and later the locked flame safety lamp, which is the actual device which we still use in the U.K., and is preferred much more than the electrical type which some countries use. It gives you a clear indication of the level of gas that is there. There were a number of explosions in the beginning with the flame safety lamps, but these were usually because of misuse or because they were opened, they were broken, or they were not properly repaired. A commission, called the Sunderland Commission, examined a number of explosions involving the flame safety lamp and found that there had not been proper maintenance on these lamps. Since that time, all flame safety lamps are checked, repaired, and maintained on a shift-by-shift basis.

As you can see from the graphs, since that time there were only two explosions in the 1930s, one in the 1940s, and one in the 1950s. This was not necessarily the flame lamps’ fault. This was people wrongly using them, opening them up to light and smoke cigarettes, which were illegal at that time in many mines. Although this graph does not show it, not all British mines in the 1950s were safety lamp mines. There were still several naked light mines where people worked with open lights, usually acetylene lamps.

One of the biggest problems was shot firing. I would guess that shot firing is involved to some degree in China. It was very high in the 1860s through the 1900s. Then we used a lighted fuse. We used black powder. After the First World War years, different types of explosives were used, electronic detonators were used. This clearly had a reducing effect. By the 1950s, we had what we call the 1954 Mines and Quarries Act. The Royal Commission started, from 1935 to 1938, to make recommendations. Before they could be implemented, the Second World War occurred, so the report was put on the back burner.

There were recommendations by the Royal Commission, but they did not bring about any change in the law until 1954. That Act immediately changed most things around U.K. mines.

The regulations regarding shot firing and the practices regarding shot firing were reviewed. It meant that shots could not be fired anywhere in the vicinity if there was more than 1.25 percent of methane in the general body of air, and if it was more than 2 percent men had to be withdrawn. It was incumbent on what we call the deputy to ensure that occurred. If there was more than 1.25 percent of methane in the general body, you immediately stopped shot firing operations.

The U.K. also had a problem with spontaneous combustion. There was one explosion in the 1880s, but it became more prevalent, as you can see, from 1910, because mines went deeper, probably deeper than what you do in America, and I suspect probably in China they have some deeper mines as well.

You have the heat; you have the right conditions for coal to spontaneously ignite. Mixed with gas, it causes the explosion.

That was like electricity. Electricity, as you can see, came later. It was not an early cause. Many causes had been reduced, and then as electricity was introduced along came a new ignition source.

But you can see immediately here that there were nine explosions in one year, in the 1930s, nine in the 1950s. The cost in lives was reduced by the "belt and braces" approach. But almost immediately, enactments came in place following each of these incidents. By the 1970s, the U.K. had reduced electrical explosions.

Friction was a new one as well, the result of bringing in the heavy machines, which ignited certain rocks—pyrites—which flew into areas where there was gas. Another thing proven, was that sandstone rock falling on a steel arch could create a spark. Nobody thought it could cause ignition, but what happened was, in laboratory experiments it was found that a rock coming down caused a vacuum, brought gas down from the roof behind the rock, and the spark ignited that gas, then ignited the coal dust, so friction became a problem. The last ignition we had caused by friction was in 1974, and we have not had one since.

We had losses of life through fire. These graphs only are of fires that caused explosions. From 1940 to 1970, the loss of life from fires was only seven lives. So I think, significantly, safeguards introduced did bring necessary reductions. There are lessons to be learned.

The point I would like to make is that—although we are not completely clear because of the technical details—there has been a full and proper transference of information to the Chinese on this issue. We think a better effort needs to be made to make sure that those people who are working hard to make mines safe have the benefit of our experience. I think if we can do that, then a positive and a good step will have been taken. Thank you, Mr. Foarde.

[The prepared statement of Mr. McNestry appears in the appendix.]

Mr. FOARDE. Thank you very much, Peter. Again, more ideas for us to take up in the question and answer session.

I would like to recognize our old friend, Leo Carey, Executive Director of Government Services for the National Safety Council. Leo currently directs a project to improve mine safety in China that is funded by the U.S. Department of Labor. The project is designed to work with the relevant Chinese Government bodies to develop rescue techniques and train miners and mine personnel in safe

operational methods. Leo has directed a number of programs of health and safety for the U.S. Congress and various Executive Branch agencies. He is the director of the World Safety Congress Project and serves as the project director for the National Safety Council's Executive Assessment of Safety and Health Management Systems for the U.S. Department of Defense.

Leo, welcome. You did not come as far as our British colleagues, but you have been traveling and we are glad that you are here. Thanks.

**STATEMENT OF LEO CAREY, EXECUTIVE DIRECTOR OF GOVERNMENT SERVICES, THE NATIONAL SAFETY COUNCIL, WASHINGTON, DC**

Mr. CAREY. Well, thank you. Thank you for the opportunity. No, I just came from across town, so I may be the shortest -traveled representative, certainly, of this group.

Let me just summarize, because I have not yet submitted a formal statement. I will do so afterward.

I am Leo Carey. I am with the National Safety Council. I am the project director for the National Safety Council's project to improve mine safety in China, and as such I am here to discuss that project today.

I only speak representing the National Safety Council and as the implementer of the project. I do not speak for the Department of Labor, of course, or for the Bureau of International Labor Affairs [ILAB], at the Department of Labor.

Let me quickly give you a little background on the National Safety Council. We have been around since 1913. Our mission is basically to educate, protect, and influence society to adopt safety, health, and environmental practices.

While we are a private organization and not a government agency, we have been chartered by the U.S. Congress to be the safety and health advocates for the nation. We have over 45,000 member organizations and several thousand volunteers who help the National Safety Council in its business.

We responded to a Department of Labor solicitation in August 2002. The solicitation asked applicants to develop and implement a program to improve mine safety in the People's Republic of China. There were a couple of things in that solicitation that are important. One, we were informed that the project would be managed actively by the Department of Labor's Bureau of International Labor Affairs as a cooperative agreement. For a number of reasons, ILAB would be an active manager in the project, and ILAB officials have been so, and ILAB has been a very good partner and have given us excellent cooperation. They also said that the applicants must form partnerships with organizations in China to help implement the project, with the idea that there would be sustainability as a result.

That solicitation required that the applicant's program institutionalize mine rescue technique training for government and mine personnel and that the program strengthen the capacity of government personnel to promote workplace safety and health in Chinese mines. The program would train miners and mine operators in mine safety methods and practices. The program would improve

enforcement of work safety laws and regulations, and have pilot projects with selected coal mines in China to implement these things. The successful applicant would travel to China with Department of Labor officials to develop a program design after the discussions with Chinese officials. We were selected as the successful applicant for the program in September 2002.

In February 2003, we accompanied Department of Labor officials to China for the project design visit, and subsequently submitted the project design to the Department of Labor, which ultimately resulted in a document that was signed by representatives of both the Chinese Government and the U.S. Government in Beijing in November 2003.

During that time, by the way, was the whole incident of SARS in China, and I think that slowed down a lot of the development of the project design during that period. The project design then has been really in effect for just a bit more than a year. The project will be a 48-month project, going until the end of September 2007. The funding for the project was set at approximately \$2.2 million.

The National Safety Council identified as its Chinese partner the National Center for International Exchange and Cooperation in China, and they have been our partner, technically as a subcontractor, under the terms of the cooperative agreement.

The focus of the project is to improve the mine rescue system in China, to improve the overall government enforcement and inspection system, and improve mine conditions through elimination of hazards. Specifically, we have undertaken a number of activities. There was a technical visit to the United States of mine rescue experts from China in 2003. Ten Chinese mine rescue experts came to the United States and visited the U.S. Department of Labor's Mine Safety and Health Administration [MSHA], which, like ILAB, has been tremendously cooperative and just an unbelievable resource in this whole project. The Chinese delegation visited with experts there and they visited at the Mine Safety Academy in Beckley, WV.

The mine rescue delegation went to working mines in West Virginia, and the mine rescue teams at these mines interacted with the Chinese experts. There were mine rescue demonstrations put on by the personnel at the mines. The U.S. coal industry has also been very cooperative in this project. They devoted a lot of time working with these experts on mine rescue techniques.

There was also scheduled a symposium in China on mine rescue, and that is ongoing. That is, actually, this week. Recommendations resulting from the deliberations of this mine rescue symposium will be developed and sent to the Chinese Government.

The last item under mine rescue will be training mine managers, management personnel, and mine rescue team members, and that will happen in 2005. Specifically, as part of the project, we identified that we would focus on Shanxi Province and on Yangquan Mine Group to make improvements. Yangquan mine is located in Shanxi Province and training will be provided to government inspectors in Shanxi. Training will also be provided to mine rescue team members from Yangquan mine group.

The second component of the project will be improving the capability of government enforcement personnel. We scheduled a visit

to the United States of Chinese Government inspectors to interact with U.S. government inspectors. That visit took place this year, 2004. Twelve Chinese inspectors came to the United States and were able to meet with MSHA officials. They had training at the Mine Safety Academy in Beckley, WV, on how MSHA enforces its rules and the processes MSHA uses.

They went to the district office in the Pittsburgh area of MSHA and had mine inspectors from the United States interact with them and discuss enforcement activities both formally and informally.

They went to MSHA laboratories in the Pittsburgh area and to a mine in the Pittsburgh area, focusing on their role as government inspectors and how the government inspectors work in the United States.

We have developed training course materials and in 2006 we will do the training of the Chinese Government inspectors.

The third area for the project is improving coal mine safety laws and regulations. It is basically a comparison of the laws and regulations in China to those in the United States and then making recommendations. This is ongoing.

The fourth area under the project is the training of miners and mine operators. We have done a pre-training site assessment at the mine group in Yangquan and have developed training materials. The actual training itself will occur in 2005.

In fact, most of the training under this project will occur in 2005, even though the project goes to 2007, because we want to be able to have time to implement not only the training, but the results of the training, and then evaluate it.

The fifth component of the project is the Pilot Mine and that is the Yangquan mine in Shanxi, and we are working closely with representatives of that mine group. The concept is the Yangquan mine will be a model mine for the Chinese. The Chinese are interested in developing a model mine so that they can bring others in the country to see that model mine and how things are working at the top level. So these mines in Yangquan are pretty good mines, as far as I understand it.

That basically describes the project. We have received excellent cooperation from ILAB, MSHA, from the U.S. Embassy in Beijing, from our partners in China at the National Center, from the Chinese Government at SAWS, both nationally and locally, from the Chinese Mine Rescue Command Center, which was established in 2003, and from officials at the Yangquan Mine Group and from the North China Institute where much of the training will occur.

We have had excellent cooperation. While we have made a lot of progress, there is still a lot to be done, and in particular in evaluating how well the project has been achieving its objectives. Thank you.

[The prepared statement of Mr. Carey appears in the appendix.]  
Mr. FOARDE. Thank you, Leo. Really useful.

Let us go right, straight away, to the question and answer session, because we have got a lot of very interesting ideas and information out on the table to work with. I will exercise the prerogative of the Chair and begin by asking Dave Feickert. To pick up on your second point in your summary, which is a question I am very interested in, and I am paraphrasing something much more

eloquent that you said, but I take it the point was “should China have to make the same mistakes that were made in the United Kingdom, in the United States, and elsewhere, particularly when they are not technologically necessary?” I mean, the technology now exists to correct these problems.

How do you address that question when you get the argument back from not only the Chinese, but I have heard it from other developing country officials: “You guys just want to hold us down. You want to make our product more expensive and make us uncompetitive in the international market, even in our own domestic market, by insisting on all these things that you now have. Give us a chance to work this up ourselves.”

Mr. FEICKERT. Well, the answer, from our own experience, is that the safest mines have been the most productive. So, those mines that have the most developed technology—it does not always have to be the most sophisticated. There are sometimes quite simple and elegant solutions to these problems, which is rather typical of industry as a whole. That has been our experience. So, I think that is the general counter to that argument.

I have some sympathy with that argument made by developing countries because it gets mixed up in all kinds of other factors, the cost of labor, wages, and so on and so forth. But here we are talking about something that is extremely basic. We are talking about the right not to be killed at work, the right not to be maimed at work. We have an obligation, I believe, and I think that is shared by the international trade union movement, to pass on what knowledge and experience we have. When you travel the world for a miners’ union, which I did—I worked for the British Mine Workers for 10 years—the thing that strikes you is that miners are the same the world over. They work in very similar conditions. There are variations. Some mines are more gassy than others, some are deeper than others, but essentially the work process is very similar and the culture of mining is very similar. It does not matter what language they speak, whether it is Polish, whether it is Czech, whether it is Chinese, whether it is English. It does not matter. Whatever accent of English, they are the same the world over.

The fact is, we did not have much choice about going through this learning experience. Peter described, I think very well, the different stages of it in relation to explosions. That is one point. If you looked at it from all kinds of other points of view, you would find the same thing.

In the United States, you also went through it. Fortunately, you did not have that total fatality rate. I think your record is something like 20,000 since records were first kept. Ours was much worse. We have more difficult mining conditions. But there is no need, technically, for anybody else to go through it.

Now, then the question becomes, “how do you transfer this technology, and is there any other blockage? Is there a problem of intellectual property rights?” Well, no more so than any other technology. It is not a military technology. It is not going to be developed into something else, so you do not have that problem. But you do have the question of license, and all that. Peter and I both know quite well that the British mining equipment industry would love to export its equipment, and they already do. So would the Ameri-



cans, and so would other Europeans. There is no shortage of desire to do it.

How do we facilitate it? I mean, it is not that we are saying that our government should pay for it all to go to China. The Chinese are quite capable of paying for a lot of it themselves, perhaps probably most of it. They are already doing it.

If you take another example which is related to this whole question of energy, their coal tends to be rather dirty. They have a problem with washing it. They are taking it out and it is creating lots of environmental problems of the old kind, the old, smog-type problems we used to have in Sheffield until the Clean Air Act came along. Everybody is happy to have gotten rid of these problems. But the Chinese actually have, I think the figure I saw, was about 85 percent of the world's super-critical boilers. These are the most efficient conventional coal-fired boilers for power generation. They have 85 percent of them already and they are building power stations at a rate that is absolutely incredible. Every two years, they build power capacity equivalent to the total British electricity capacity. Every two years! So we have got to help them solve the problem. I think that is the point we are making. So, it applies across the face. The intellectual property rights can be resolved, as it already has been in other industries.

Mr. FOARDE. Thank you. Very useful.

Before I pass the microphone on, I know the answer, I think, with respect to Leo Carey. But both of you have been miners, right? I know you have, Peter.

Mr. MCNESTRY. Yes.

Mr. FEICKERT. No, I just worked for the union.

Mr. FOARDE. You just worked for the miners. All right. Thank you.

Let me pass the questioning on to my friend and colleague, Dave Dorman, who is the deputy staff director of the Commission and represents Senator Chuck Hagel, our Co-chairman.

Dave.

Mr. DORMAN. Thank you, John.

First of all, I would like to say thank you to each of you, on behalf of Senator Hagel, for coming today. This is a critically important and very timely subject, so our thanks to you for informing our Commissioners and other Members of Congress on this issue.

I think it is particularly appropriate that we are discussing something this important and something this timely on International Human Rights Day, the anniversary of the Universal Declaration of Human Rights.

I have a short question for each of you based on the testimony you just gave.

Mr. Carey, just as a point of information, how easy, or conversely, how difficult, was it to find a partner in China for the project? Of course, the subtext is, just how interested is China in this sort of assistance?

Mr. CAREY. Well, it was an interesting experience, finding a partner. We had a very short time to respond to the request for application. We have an international unit, so we had some contacts around the world, including in China. We were working on other international projects. So we originally contacted the director of the

National Center because we had contacts with him, and he was already part of a group that was going to submit an application and eventually compete for it as well, so he declined to join us, and we found another group. When we put in our application, we had that group. So, it was relatively easy.

As it turned out, in the discussions, negotiations, and the development of the final project design with the Chinese Government, we ended up going back to the Center and partnering with the Center. So, I think the ease, for us, was because of our international connections and our international activity.

The interest of all the people that we have worked with in the mining community—and by Chinese mining community, I mean the mining companies, both local and central government officials, and the Center has been exemplary.

The Center, again, is identified as the National Center for International Exchange and Cooperation. Their expertise and interest is in coal mine safety. Everyone in the mining community that we interact with, I think, is not only very interested, but very committed to improving coal mine safety in China.

Mr. DORMAN. Good. Well, thank you.

Pat Dyson has told me that a major reason for the success of your program has been your personal energy and enthusiasm making it work, so thanks. Thanks for that.

Mr. CAREY. Well, thank you. Thank you, Pat.

Mr. DORMAN. Mr. McNestry, as you were making your presentation, I wondered whether mining universities in China have safety issues and the history of safety as a part of their standard curriculum. Do you know? Is safety part of the curriculum in mining universities in the United States and U.K.?

Mr. MCNESTRY. Mr. Dorman, for the last eight years, I have heavily been involved in the regeneration of U.K. coalfields communities which were decimated by the previous government, and that is where I have been involved, directly supported by the Deputy Prime Minister.

Equally, I have been spending my time advising the Department and Industry Ministers on the outcome of the health claims for mine workers, for which £7 billion have been put to one side. So, it is a rather big task.

With the Chinese, yes, I have met them at ILO congresses, the government officials and representatives. In 1993, I moved the Mine Workers Charter, on which the Chinese and all world miners elected me to speak on their behalf. Without going into too many details, we had a delegation in Paris in 1997 and we discussed the problems. Then we considered this issue in the middle of this year when I sat down and talked to David and also sought assistance from the Deputy Prime Minister and his department. We knew that something had to start, and it had to start fast and move fast. I am not enamored with the slowness of action in many departments in the U.K. In fact, I was never enamored with some of the actions in the U.K. with respect to our own progress. We just did not move fast enough. I think certain areas have to be bypassed to move fast.

No, we have not been contacted to speak on this in China. We have looked to see who would do the job if we were invited, because

the Deputy Prime Minister did raise this in Beijing last Tuesday or Wednesday. But we have people that can do it. The ex Chief Inspector of Mines is available and he has experts who could assist. It certainly would come from a person who is very frank, very open, and not necessarily a bureaucratic sort of person. I think he would welcome the offer to go out there and speak to universities on what we went through, and I would leave it at that.

Mr. DORMAN. Good. Well, thank you.

Just a very quick question, Mr. Feickert, for those of us who know very little about the science of mining. Does a small mine have to be dangerous?

Mr. FEICKERT. It does not have to be, but statistics show that in countries where there are small mines, they tend to be more dangerous than larger mines. I mean, there are a number of reasons for it. The conditions are different. The technology is at a much lower level, normally, and the workers are quite often not as well trained. In large mines and in medium-sized mines, it is much easier to train people because it is an economy of scale thing. If you are able to employ a safety engineer, for example, then you can do a lot. The safety engineer can do a lot. Whereas, a small mine would not have a safety engineer. It will only be the mine manager who has the mine engineering qualifications. So, there are a number of different reasons for it. I mean, that is certainly true of Britain. Peter knows quite a bit about that as well.

Just a point, a quick answer, to the Chair on my background. Before I retrained as an ergonomist, I worked in industry for 10 years and I came within 30 seconds of being crushed to death in a container yard, so I know what it means to be in that situation. I know it was a safe industry, but it can still happen and it really takes some effort to make sure that it does not happen.

Mr. DORMAN. Thank you.

Mr. FOARDE. Susan Roosevelt Weld is the general counsel of the Commission, and I will turn it over to her for questions.

Susan.

Ms. WELD. Thanks, John. My first question is about the money that it takes to make the necessary improvements. Maybe, Mr. Carey, you could answer us on this. A similar question in China is HIV/AIDS, which is, again, a world problem, not just a Chinese problem.

Mine safety is a world problem, as some of you have noted. But in China, progress on HIV/AIDS has been difficult because the money was not being sent down from the central government to the local places where it needed to be spent. Is that an issue now with mine safety? What can happen in China, as in the United States, is that the government makes laws and then tells the local governments to fund whatever has to be done, to find the money to fund it themselves out of existing budgets.

Mr. CAREY. Well, it is not something that we have really evaluated in the project, so I really cannot say definitely if that is the problem or not. In the pilot mines we have worked with, there seems to be funding available to make changes. Whether that is true throughout the system, I do not know. I mean, I have read things and I have an idea, but it would be speculation. But I do believe that the technology, the knowledge, is there.

I do not think that it is a matter of the Chinese not knowing what to do. I think they know. They have great experts. The people that we have talked with are very knowledgeable. I have observed debates and discussions about how to do things. The Chinese have people that are very knowledgeable and know what to do.

Why this knowledge is or is not being implemented is, I think, a significant issue. Whether there are funds available I think is a matter that should be looked into, but we have not done that under this project.

Ms. WELD. One question, which may or may not be a short one. I think, Mr. McNestry, you mentioned the role of churchmen in forming investigatory commissions and in improving the conditions in mines in England.

Mr. MCNESTRY. In the early stages.

Ms. WELD. Yes. And I wonder, what was the role of the religious community? Was it helping to educate the miners? Or raising the consciousness of people in government? What was the particular role?

Mr. MCNESTRY. It was different with different churches. With the Methodists, it was about the loss of life. With the Church of England, it is on record: it was about bare-breasted, naked ladies pushing tubs up the roadway with naked mine workers near them. So, it came from all ends. They all had different reasons to see changes to the regulations. But once it started, the politicians took over and ran with it. It was only initiated by the churches, if you want. After that, the politicians then got on board every time there was an explosion or a disaster. It then rolled forward in a program of its own.

Ms. WELD. Thank you very much.

Mr. FOARDE. We always give the opportunity to question the panel to the person on the staff who is responsible for organizing the roundtable, and in this case it is our friend and colleague, Pat Dyson, who is our senior counsel for labor affairs.

So, Pat, over to you.

Ms. DYSON. I want to thank everybody for coming. It has been very useful, obviously. You can tell by the questions asked so far.

What I would like to know from Mr. Feickert is you said that the solutions to some of the major problems in mine safety in China could be low cost. Do you have any estimate of how much it would cost just to cut the fatalities in half, for instance, for equipment and for training? Is this a large cost issue or are there small-cost ways of using this technology?

Mr. FEICKERT. Well, I will answer to begin with, and perhaps Mr. McNestry will want to add something. Our experience has been that it is the combination of safety organization and technology. Mine workers' unions in Britain, and in most parts of the world, have never opposed technological developments because, by and large, they lead to an improvement of working conditions and of safety.

One of the very earliest moves in terms of organization was the election by the mine workforce of a workman's inspector. This started as early as 1872 in Britain. That was the first legal basis for it. What happened was that this role was recognized formally in law in 1911 by the Coal Mine Safety Act, which also officially

recognized the role of pit safety supervisor. It did a number of different things. The workman's inspector was selected from among experienced miners, and was elected by the workforce. It was somebody who had had a minimum, as it came to be, of five years' practical experience, and was properly trained in specialist courses and was part of the whole safety culture. The workman's inspector could take a whole shift to go around a mine and inspect every part of the mine underground. There were also worker representatives, safety representatives, for the surface. And the inspector was also able to make a report that was sent to the government mines inspector, and the government mines inspector was obliged to act on the basis of that report.

There are a lot of other elements or powers that were associated with that act—that Mr. McNestry referred to—of 1954, which was the safety bible of the modern British coal industry.

So adding those organizational aspects and the training and the specialists, it is not that expensive to train worker safety representatives, especially if they are experienced people. They already know most of it. You put it together with a technology package which is appropriate to the conditions or the problems that a mine faces, and not all of that is expensive.

Now, I was reading that China recently installed gas detection systems in quite a number of its large mines, at the cost of \$418 million. I mean, that is a considerable sum of money for a developing country to commit. I am sure that it was necessary, but in order to make the whole thing work properly you have got to have the parallel safety organization working together with the technology. I think that is part of the transition that they are going through. They have not got all these things synchronized or working most effectively together. That is the impression that I have.

So for the costs, I cannot answer your hypothetical question. It would be nice to know, because it is the kind of thing that our politicians want, though, is it not? They want something in one sentence that summarizes everything.

Well, I think the sentence that they have got to consider is that China produces 35 percent of coal output globally and 80 percent of fatalities. If that does not persuade some of your people and our people to get their backs in behind this effort, then I do not know what is going to.

Mr. FOARDE. Really useful. Thank you.

Let me now recognize our friend and colleague, Carl Minzner, who is a senior counsel on the Commission staff, for some questions.

Carl.

Mr. MINZNER. Hello. Thank you. Thank you all. It has been an interesting opportunity for me to learn about the details of the coal mining industry. I certainly have to confess some lack of knowledge with regard to the technical aspects of coal mining.

However, let me just follow up on something, Mr. Feickert, that you just mentioned which I was quite interested about. You mentioned the drastic improvements of mine safety in the U.K. were in part the result of organizational changes, such as the development of safety organizations, that appear to have been primarily worker driven.

That was to say that you mentioned that the workers themselves had the ability to appoint the safety representative, and this person had the responsibility of having liaison efforts with the government mine inspectors.

Similarly, Mr. McNestry, when you talked earlier about the parliamentary commissions, I got the strong sense that part of the reason for the improvement in mine safety was the result of popular pressure, organized groups that were bringing pressure to bear on government to address these issues. Now, as you all know, that type of organized political pressure in China is much more limited.

Could you, first, from a historical perspective, talk a little bit more about the importance of these elements in the improvements in the West, and then also for Mr. Carey, could you also talk about to what extent there is any recognition in China that perhaps some of these independent miners' organizations that are focused on safety might be an effective way of pressing the issue or improving miners' conditions? Thank you.

Mr. MCNESTRY. We did start by saying the churches led the charge initially, and the politicians did take over. Statutory authority was placed on the people in charge of a district in a mine, known as a deputy. The same occurs in France. In Germany, he is called a miner, but he exists in Australia, exists in Canada. You have an in-charge person, which is something similar, but not quite the same statutory authority. It is total authority for mine operations, statutory authority. The deputy has statutory responsibility.

He does an inspection every four hours and he signs for it. If something is wrong on that report, it is his responsibility. That report goes to managers, and they counter-sign, and it is left for the government inspector to see. That continues throughout the year. That is the sort of working practices we had, along with the workman's inspector, who does a signed report, and that sits on the table. If the government inspector comes along, he will review the workman's inspector's reports that went out. We are not aware of any pressure that exists at this point in time, but it may come.

I did address the Chinese Minister for Coal, Mr. Zhang Baoming, two years ago in London, and he had a 25-man entourage. He was talking about running down certain sections, which have been reversed, of course. But when I spoke, I mentioned, rather than just do it, he has to consult with the people. He has to take people on board, take notice of their position. His whole entourage was in agreement. He kept a very straight face, but he was the only one that did. So, I got the impression there was a change, where people are beginning to feel like you can take the people with them.

On costs, they have bought used high-standard face supports systems from the U.K., at significant cost. Yet along with those installations, other equipment for safety protection went hand in hand with face installations being equipment which would switch off power if methane levels got high, it would beggar belief for me to think that they bought the system without buying the protections for the system.

On things like the stone dust barriers, which really restrict the ignitions at their source, these are simple hangers on the side of an arch support with lattice boards across full of the stone dust.

They can be made locally. So, I do not see how these systems would incur great cost, apart from the time of putting up the barriers.

The tube bundle system, which was simply tubes, which ran from the surface—it would not say on the licenses, but such tubes no doubt are made in China. Everything we buy in the U.K. and in America, there are lots made in China. The tube simply draws down, from a pump on the surface, air from a district of the mine. It sets off an alarm if that air contains methane levels and carbon monoxide levels higher than the maximum allowable levels. So, they are simple devices. There are computerized systems, computer-driven, which will tell you where machines are, what the atmosphere is in certain areas. But things like the barometer on the surface of the mine, with all men taught to read the barometer and see if it is going down or rising. These are probably being done, and they are not expensive. What we are saying is we do not think that technology is a problem to the Chinese.

If there is some technology that they have not got which they should want, they should be made aware of it. The difficulty is that we do not know what they are aware of in the municipal mines and in the unlicensed mines. In fact, the unlicensed mines, I understand, should not exist.

Mr. FOARDE. Just to clarify, when you say that they bought the equipment, the Chinese Government has bought it for state-owned mines or is it the private operators that are also buying it?

Mr. MCNESTRY. No. If you can picture the closures in the U.K. over the years, most of the mines that closed had the most modern equipment. Each shield support is about four feet wide. It consists of four or six hydraulic legs. It is run by a hydraulic power pack. You will have almost two hundred of these on a face, which support it and which advance forward.

Mr. FOARDE. Right.

Mr. MCNESTRY. But the cost of each one, which they would pay for, is much cheaper than the original purchase price which the U.K. government paid, or rather British Coal paid. Well, that technology—not just from the U.K., but technologies come from all countries—goes to China, which, collectively, is a significant cost. My understanding is that safety protections for equipment is relatively cheap.

Mr. FOARDE. Useful. Thanks.

I think there is a question on the table to Leo, though. If you would go ahead, that is fine.

Mr. CAREY. Well, I could not agree with Dave more when he said that the issue here is technology and organization. I heard “organization” maybe a little differently than the question might imply, in that it is not “organizations,” it is “safety organization.” There are a lot of things that go into that, organizations being one of them.

But I really think that this is a significant interest to the people from China that we have worked with under the project. That is, how to organize, how to get things done. The issue is not knowledge of the technology, but how do we organize to ensure that it happens. I think that a lot of discussion we have had, is about how the government organizes to ensure that the mining laws or the mining regulations are adhered to. There is a lot of discussion about that question, and a lot of interest on the part of the Chinese

on how we in the United States do that kind of thing. How does the central government ensure that the local government is even following the procedures that the central government has put in place for the government inspectors to follow? How do you know they are doing that? They have a lot of interest in this issue.

At MSHA, they audit their local offices to ensure that the local offices are following the central office procedures. There was a lot of discussion with the Chinese on how to organize and how to develop a safety culture.

In the United States, the mining community is really that, a community, and it includes every single miner. In contrast, in China, a lot of these miners are what they refer to as migrants, meaning people coming from the rural areas to take jobs. They do not have a mining background. They have not participated in a mining culture in their lives. That is a real concern. So I think this whole issue of organization is extremely important and is a key issue in our discussions in implementing the project in China.

When you talk about organizations, and particularly independent organizations, I am not sure that such a thing exists in China. I think there are real system issues beyond mining that have to be dealt with. At the same time the Department of Labor put out the request for applications for this project, they put out a similar one for applications for a project to work on the rule of law in China. As you pointed out, and as was testified to here, the implementation of laws in the U.K. apparently corresponded to increases in safety improvements.

Whether or not that will happen in China remains to be seen. There have been changes in the law. But in China, just because there is a law, whether it is implemented and thereby safety improved, is an open issue. So I am not sure that there exists the same kind of independent organizations to put the pressure on. There may be other ways that pressures are brought to bear to make changes, but I am not sure it is through independent organizations.

Mr. FOARDE. Dave, would you like to address that, too, please?

Mr. FEICKERT. Yes, if I could just supplement that answer, because I think I understand the point you are getting at, and Leo has raised it as well. From a trade union point of view, the situation in China is changing. Everything is changing. There is not a single part of that society that is not changing. It is in a state of flux, it is fluid.

The British Trade Union Congress [TUC] General Secretary was recently in China with a team from the British trade unions, and for the first time had high-level discussions with their opposite numbers and the All China Federation of Trade Unions.

After the discussion, which was very practical—British trade unions tend to be rather pragmatic and practical; they are a bit famous for it around Europe—the Chinese trade unions asked the TUC to help them train their local representatives in health and safety and in collective bargaining.

Now, that is quite a development. It is not the kind of request that we have had before. I worked as a TUC official for 10 years in Brussels and never saw such a request. So, that is one important change that is taking place.



The other thing, I think, and this is very much the case in our own experience, is that the safety organization in the British coal industry, particularly the role of the workman's inspector and also the pit safety supervisor, was backed up by strong trade unions representing those two groups. The National Union of Mine Workers, and the pit deputies, had a separate union. Peter was the General Secretary of it. We were extremely well organized. In the National Union of Mine Workers, we employed our own professional mining engineers. They were in a safety department, but they also worked on mine development plans together with the employer.

We had 20 mining engineers at one point. These were men who had been mine managers. Some of them had been area directors of whole regions. So when they picked up the telephone to the chief mines inspector, or the government inspector, then the government inspector, or chief inspector, listened to every word they said. There was an important set of relationships there, and that is what helped to create the progress that we were able to achieve. So, it is important. That is a crucial thing.

The workers' representatives need to be supported, and not only trained, but they also have got to be experienced people, and they have got to be supported by their own organization. These situations have all been different in China. It is difficult to say where it is going to go. I am more optimistic about where it is going to go, personally.

Mr. FOARDE. Thank you all.

I would like to recognize our friend and colleague, Keith Hand, who is also a senior counsel on the Commission staff.

Keith.

Mr. HAND. Thank you all very much for an interesting discussion.

We touched on this issue, but I want to address one question a bit more directly. In the small and private mines, to what extent is the problem based in sort of willful violation of the law and to what extent are we just talking about a lack of education? Also, is there any resistance from the miners to any of the safety improvements that we were talking about?

I was struck by Mr. McNestry's comment that there were some accidents in England because people had smuggled cigarettes into the mines. Is there any objection to some of these safety standards as inconvenient or bothersome by the miners themselves? Thank you.

Mr. MCNESTRY. The only contact we had was with two persons who expressed disappointment with the municipal mines and the small, legal mines. They thought big achievements were being made in the state mines. We were not even sure at the time they told us that that they were allowed to tell us anything. So, there is little trade union contact, as far as I am aware, with the actual mine workers in the villages.

Mr. FEICKERT. From our own experience in small mines, there tends to be both those factors. It is a question of ignorance on the one side, but occasionally you could say negligence. Let us put a legal concept on it for a lawyer. From what I hear and what I have read on the small mines in China, I have heard, as I am sure you

have, of horrific incidents that happened to miners in small mines, and how they have been killed. I think a mine manager was jailed for a very long time because he sealed the mine after the miners had been killed, and effectively entombed them. That reminds me of the 18th century in Scotland, where miners were not even recognized as being properly human and were not allowed to be buried in the official churchyard. So, we have come a long way from there, and that is something that can change, and it has got to change there as well.

Mr. FOARDE. Let me pick up the questioning now by doing just a few things to clarify.

Dave, in one of your points you anticipated the question I had about non-fatal injuries and the rates thereof. And if I understood correctly, you said that they are four to five times the rate of fatal injuries. Can you, just for the record, clarify what types of non-fatal injuries are most common, as far as you understand it? One can imagine what the range might be, but it would be good to hear from someone who is expert.

Mr. FEICKERT. Well, Peter also spent every waking hour looking at this question, and was probably dreaming about it at night as well half the time in the old days. We are talking about really serious injuries. We are talking about broken bones, we are talking about concussions, we are talking about crushing, we are talking about fingers ripped off in machinery, we are talking about the foreground, where people are crushed but not killed. So, it is going to involve a lot.

I think different countries classify major injuries in different ways and different levels of severity, and I do not think there is an internationally accepted classification. In Britain, we have tended to have a classification system where we have fatal accident, we have major injury accidents, and we have minor accidents.

The lost work accidents feature in the statistics, and it is all measured by 100,000 man shifts. So, it is a measure of exposure. It is not a measure of how much is produced.

Mr. FOARDE. Right. But as far as you know, do the Chinese collect those sorts of statistics and publish them as well, and will they be the same categories or are they different?

Mr. FEICKERT. As far as we know, their statistics from the large mines that they give to the ILO seem to be reasonably accurate. I am not in a position to challenge the accuracy of those. I was talking to the director of safety at the ILO who actually is an Australian mining engineer, who was recently in China signing that agreement I was telling you about. He tends to think that those figures are reasonably accurate. But they do not calculate them in terms of exposure because I do not think they have the information, the man-time statistics. Once again, it is a question of organization. It is easy for us to do it these days, but it took us rather a long time to learn how to do it meticulously.

Mr. FOARDE. Thank you.

I would address a similar question to Peter about your understanding of the formal study of causes of mine explosions. For example, you have given us a very rich set of statistics and studies from the U.K. But as far as you know, is anybody in China doing

this sort of data collection and analysis in the mining universities or in the government, or anywhere?

Mr. MCNESTRY. Not to my knowledge. All we have is the documentation that you have, and it does not even describe what the initiator of the explosion was, whether it was coal dust or methane. We do get fewer explosions of methane alone, which is rare. It nearly always includes coal dust. That knowledge, we do not have.

Can I just answer one question?

Mr. FOARDE. Sure, please.

Mr. MCNESTRY. Reader describes specifically what is a major injury in the U.K., and it is an amputation, a fracture above the wrist, above the ankle, unconsciousness, a burn to a certain degree, poisoning, et cetera. There is a very specific list of what is a major injury. We do tend to look at fatals as a fact. We got a bit nervous when the Washington Post explained over here that major injuries were not what they were reported to be. There were some companies not exactly reporting correctly the number of major injuries they had.

We felt that we were comfortable in the U.K. until we examined our statistics, and we learned there was evidence, and it was proven, that the same sort of things happen in the U.K. With a fatal injury per 100,000 man shifts calculation, you know you are on solid ground.

Mr. FOARDE. Right.

Mr. MCNESTRY. A horrible thing to say, but you know that as a fact. Statistics do move up and down, when considering major accident figures but fatal injuries based on 100,000 man shifts are considered as a sad but reliable tool for measurement.

Mr. FOARDE. I have one more question and I am not sure to whom to address it. Leo, I think you talked about a comparison that has been done of U.S. laws with Chinese mining laws. Is that right?

Mr. CAREY. Yes. We are in the process of doing that.

Mr. FOARDE. That is part of the project? Good. Do you, Dave, or Peter, know if any such thing has been done with respect to Chinese and U.K. mining laws?

Mr. FEICKERT. As far as we know, that has not been done. I think the thing about regulations is that it is quite often possible to have good regulations on paper. It is making them work that counts, and all the rest of what we have been talking about is crucial to that. So, you have got to have good regulation. The U.K. developed a very good regulatory framework for its coal industry, but it has the other things as well.

Mr. FOARDE. Without being prompted, you have identified one of the basic themes, I think, that we have teased out of the facts over the last two or three years in our own annual report process, that China has begun to develop, in the whole realm of rule of law, some pretty good rules and some pretty good regulations, sometimes world-class ones, but the implementation of them, getting them done, particularly at the provincial and local levels, is very difficult.

Let me ask Dave Dorman if he would like to ask another question or two. Our time is getting short.

Mr. DORMAN. Yes. Just two short questions for clarification. Mr. Feickert, you mentioned in your written statement that China has signed, but not ratified, the ILO Convention on Mine Safety. Could you help us understand the obstacles in China that prevent ratification. Once ratified, what does it mean for China? Does it open doors to additional assistance from the ILO?

Mr. FEICKERT. Well, I was talking to the ILO about this and they have been conducting their own campaign to persuade the Chinese Government to sign up to the 1995 Convention. We are trying to persuade our government to sign it as well, because they have not done it. The United States has signed.

Our government tends to take a kind of holier-than-thou attitude to these kind of things because they say that we are better than they are. That is irrelevant from our point of view. This is an international measure. It was worked out by an international body. It had all the experts from the coal industries there, they had the governments there, the employers there, the trade unions there. This is a common agreement. It was thrashed out. There were agonizing arguments over particular aspects of it, but it is there, and a number of countries have signed it.

I personally would agree with the safety director of the ILO, that if the Chinese Government did sign on to it, then it would open doors. It would make things easier. The Convention has a lot of the aspects that we have been talking about built into it. It has a worker safety representative. It has the role of pit safety supervisors. It is, if you like, the distilled experience of the international mining industry.

It is not just coal mines, by the way. It is the distilled experience of the international mining industry, but it is based on minimum standards. So, it is not setting impossible targets. It is not saying to any country, you have got to have the best standards that have been achieved anywhere. These are minimum standards. That is how the ILO operates. That is a sensible approach to take. Perhaps we should aim for the Chinese and British governments signing up on the same day.

Mr. DORMAN. One question for you, Mr. Carey. You mentioned in your presentation that part of your project involves helping to construct a model mine. We all know that models, like this one, could be an important impetus for change in China, and have been part of developmental experiments in China for some time.

You mentioned in your statement that the purpose of the model mine was, in some sense, to be a demonstration project for the international community. Is there also a sense in China that this model mine will assist in training other groups that are either upgrading or managing mines throughout the country?

Mr. CAREY. In our proposal, the National Safety Council was thinking of it in terms of a pilot mine that we would take a typical—if there is such a thing—mine, apply our knowledge, our training, and see if safety improved. But when we engaged the Chinese representatives in the discussion about finalizing the project design, they wished to make it a model mine. But the model was not, and I did not mean to imply, it was for international purposes.

The idea behind the model mine, in their mind, which we ultimately agreed to, was to make this a mine that the other mining

groups in China could come to visit, see how it is being done correctly, and go back and take that information about how it is being done correctly and disperse that throughout the country. That is ultimately how we ended up with the concept.

Mr. DORMAN. Good. Thank you.

Mr. FOARDE. Let me award the privilege of asking the last questions of this morning to our colleague, Pat Dyson.

Pat, please.

Ms. DYSON. I would like to ask Leo a question, but it really comes from listening to Mr. Feickert and Mr. McNestry. They seemed to indicate that the election of safety inspectors within the mines, in other words, people that they themselves know and trust, was the beginning of the safety regimen in Britain.

Have you had any discussions with the Chinese about any such selection system by miners? There has been some experiment, as you know, on electing safety committees in shoe factories in the south. But have you planned, or do you plan, to discuss the idea of some self-selection?

Mr. CAREY. I think our focus has been, and will continue to be, on involving the workers in mine safety at the mining level. How those people are involved, whether they are selected by superiors or whether they are elected by their peers, I do not think is something that we have addressed one way or the other.

Our focus is involving people at all levels, including miners themselves, in safety, so we have not addressed the election issue, no.

Mr. FOARDE. If you have another one, go ahead.

Ms. DYSON. No.

Mr. FOARDE. Well, our timing is perfect because our 90 minutes has gone very quickly and I do not want to try the patience of our three distinguished panelists. Our audience has also been very patient.

I would just say this is the final formal public activity of the Congressional-Executive Commission on China for the 108th Congress, and we hope to see all of the people in the room, and many others, for similar activities in the 109th Congress beginning in January.

So it is my privilege, on behalf of Congressman Jim Leach and Senator Chuck Hagel, our co-chairmen, to thank Dave Feickert, Peter McNestry, and Leo Carey for coming this morning and illuminating this fascinating topic.

There is much more to be said and we could go on for quite a bit longer, but, God willing, we will have another opportunity as we will all keep monitoring this situation in China and trying to make improvements where we can, and give the type of help that you have so eloquently given.

On behalf of the whole Congressional-Executive Commission on China then, I would like to wish everyone happy holidays and a prosperous and peaceful 2005, and we will bring this one to a close today. Thank you.

[Whereupon, at 11:30 a.m. the roundtable was concluded.]



## **A P P E N D I X**

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## PREPARED STATEMENTS

## PREPARED STATEMENT OF DAVE FEICKERT

DECEMBER 10, 2004

The global economic and energy context—last year China contributed a third of world economic growth. As a result of the size and speed of growth, China's energy demand has been increasing rapidly, with electricity generating capacity equivalent to total UK capacity being added every 2 years. This has led to a rapid increase in both indigenous and imported energy use, leading to upward pressure on international prices, especially of oil and coal. Chinese energy demand is not only strategic for its own economy, but it has become a strategic factor in global demand, price structure and, potentially, supply.

## COAL PRODUCTION IN CHINA

- Chinese coal production increased from 929 million tonnes in 2001 to 1,431 million tonnes in 2003 (BP 2004 Statistical Review of World Energy—converted from Mtoe to metric Mtce). Actual physical tonnage was 1.7 Bn tonnes in 2003 which, by August 2004, was 15 percent higher than for the same period in 2003.
- With such pressure on production, pressure flows through onto working conditions, especially as the industry is so various in its nature. In villages, some small mines are virtually equivalent to the “Bell pits” existing in 18th century Britain, while large new mines elsewhere are highly mechanised. Small mine output increased by 29 percent in 2003 (36 percent of total); “county” mines make up 17 percent of output and large state mines produce 48 percent of output.

## COAL MINE SAFETY STATISTICS

- Figures provided to the ILO reveal 6,434 fatalities in 2003, 561 fewer deaths than in 2002. The first 6 months of 2004 show 346 fewer deaths than in 2003. In 2003 the fatal accident rate in large mines was reported as 1.1/Mt; in county mines, 3/Mt; in small mines 7.6/Mt. The US Mines Rescue Association has tabulated the main location by mine site for fatal accidents in 2002 (attachment one).
- Given the nature of the industry the safety and health problems common to coal industries elsewhere often exist in more dramatic form: dust/heat/noise—silicosis, pneumoconiosis, hearing loss and vibration; gas detection, fire and explosion prevention are major issues; bureaucratic problems in emergency response; inspection, especially in smaller mines, is inadequate; training is limited to larger mines; mines with a single entry/exit (not in compliance with ILO C176 Safety and Health in Mines Convention, 1995).

## HISTORICAL COMPARISONS—THE EXPERIENCE OF THE UK

- Over 100,000 miners have been killed at work in the UK since national records were first kept in 1850. Many thousands died before that date and hundreds of thousands have been seriously injured at work or were hit by serious occupational illness.
- During the second part of the 20th century the UK came to have one of the lowest accident rates in the world, but this took more than a century of sustained effort to achieve. In 1910, when the UK workforce was above 1 million men, 1,818 miners were killed in mine accidents. In the peak production year of 1913 (287 Mt) 1,785 were killed, giving a fatal accident rate per Mt slightly higher than the current Chinese rate (6.2/Mt vs. 5/Mt).

## UK SAFETY STRUCTURE

- By 1911 the UK had a well-structured system of statutory safety inspection, a statutory role for pit safety supervisors (deputies) and a statutory role for worker inspectors (elected by the workforce and providing a statutory inspection report), a role that was created originally in 1872. (More detail is provided in Mr. McNestry's evidence.)
- Moreover, the industry had a trade union structure that re-enforced and defended these statutory functions.
- Following nationalisation, much more progress was made in 1946 with the introduction of a system of safety consultation operating at all levels and later, with the 1954 Mines and Quarries Act, the “safety bible.” As modern monitoring



and detection technologies became available it became possible to improve safety still further.

- By the late 1980s the UK deep mine industry had become one of the world's most technologically advanced. The rapid closure of the industry in the 1990s had little to do with either its safety or cost structure but was a consequence of the way electricity supply industry was privatised.

#### PROPOSALS FOR JOINT FUTURE WORK

A number of initiatives are already being taken, offering support to China's coal mining industry:

- The ILO is working directly with China on a number of issues, including a successful project to train small-scale miners in Hunan province. It is lobbying the Chinese Government to ratify C176, the ILO Safety and Health in Mines Convention, 1995. The US, South Africa, Zimbabwe, Zambia are among the mining countries that have already done so. Within the EU those that have ratified are: Austria, the Czech Republic, Finland, Germany, Ireland, Poland, Portugal, Slovakia, Spain and Sweden. Luxembourg has decided to ratify all ILO OSH Conventions and, during its forthcoming Presidency of the EU, will seek to persuade the others, including the UK.
- A joint ILO/ICEM/ICMM delegation (international federations of energy and mining trade unions and employers) will have returned from China by 10 December, after investigating how a tripartite approach from outside as well as inside China could be used to improve mine safety.
- A similar and linked Australian tripartite initiative is also taking shape.
- The US National Safety Council has a contract to improve mine inspection and mine rescue.
- Other initiatives (including in the EU) are being developed that could provide practical support, based on experience gained in other mining countries.

#### APPENDIX—LIST OF COAL MINE ACCIDENTS IN CHINA, 2002

[In terms of fatalities, accidents are categorised into three types: serious—3 deaths or above; very serious—10 deaths or above; extremely serious—30 deaths or above. The following table excludes "serious accidents."]

Date (mm-dd)	Province/Municipality	Name and Location	Type	Fatalities	Mine ownership/Legal status
12-23	Guizhou	Sanchahe Coal Mine, Qiannanbuzhou District.	Blast	17 dead, 2 injured	Privately run with permit.
12-22	Gansu	Xiaonangou Coal Mine, Lanzhou City Jincheng Tourism Co., Baiyin City.	Blast	11 dead	Check passed but permit not issued yet.
12-21	Guizhou	Zhongxin No.3 Coal Mine, Bijie District.	Gas buildup	12 dead	Township and village mine with permit.
12-06	Jilin	Wanbao Mining Bureau Coal Shaft No.2, Taonan city.	Fire	30 dead	State-owned; victims' families put in different lodgings to prevent collective action.
11-14	Yunnan	Guoshuigou Coal Mine, Kunming City.	Blast	11 dead	Privately run; official check passed; permit not issued yet.
11-10	Shanxi	Taixi Coal Mine, Jinzhong city.	Blast	37 dead, 17 survivors	Village mine with no permit.
11-08	Shanxi	Xipan Village Coal Mine, Yangquan city.	Blast	26 dead, 9 survivors	Township and village mine with permit.
10-31	Inner Mongolia	Changsheng Coal Mine, Baotou City.	Blast and blaze.	14 dead	Township and village mine with permit.
10-29	Guangxi	Ertang Coal Mine, Nanning city.	Fire	30 dead, 5 survivors	State-owned.

## APPENDIX—LIST OF COAL MINE ACCIDENTS IN CHINA, 2002—CONTINUED

[In terms of fatalities, accidents are categorised into three types: serious—3 deaths or above; very serious—10 deaths or above; extremely serious—30 deaths or above. The following table excludes "serious accidents."]

Date (mm-dd)	Province/Municipality	Name and Location	Type	Fatalities	Mine ownership/Legal status
10-23	Shanxi	Zhujiadian Coal Mine, Luliang District.	Blast	44 dead, 22 survivors	State-owned.
09-10	Henan	Daluzai Coal Mine, Hebi City.	Blast	13 dead, 22 survivors	Township and village mine with permit.
09-03	Hunan	Qihu Mining Co. Ltd, Loudi city.	Gas buildup	39 dead, 16 survivors	Shareholding mining co., check passed.
08-29	Guizhou	Sixiang Coal Mine, Bijie District.	Water leakage and flood.	16 dead	Privately run with no permit; 16 missing, presumably dead.
08-14	Jiangxi	Yongshan Coal Mine, Jingdezhen city.	Blast	13 dead	State-owned but illegally subcontracted; ordered to close down.
08-12	Heilongjiang	Lixin Coal Mine, Jixi City.	Blast	11 dead	Township and village mine with no permit.
08-10	Henan	Guowan Coal Mine, Zengzhou Mining Bureau.	Water leakage and flood.	10 dead	State-owned.
08-04	Shanxi	A mine shaft owned by Chiyu Labour Services Co., Houzhou city.	Fire	18 dead, 1 survivor	Check not passed yet.
07-24	Guizhou	Taojiawan Coal Mine, Liupanshui city.	Blast	18 dead, 7 injured	Privately run with no permit.
07-15	Shanxi	Dayangquan Coal Mine, Yangquan city.	Blast	12 dead	State-owned.
07-08	Heilongjiang	Dingsheng Coal Mine, Hegang city.	Blast	44 dead	Township and village mine; check passed; business permit not issued yet.
07-07	Guangdong	Lianda Coal Mine, Shaoguang City.	Blast	10 dead	Township and village mine with permit.
07-04	Jilin	Fuqiang Coal Mine, Baishan city.	Blast	39 dead	Privately run with no permit.
07-03	Shaanxi	Xigou Coal Mine, Weinan city.	Water leakage and flood.	15 dead	Township and village mine with permit; 15 trapped, presumably dead.
06-28	Chongqing	Shuijiang Coal Mine, Nanchuan County.	Blast	10 dead, 3 injured	Shareholding company.
06-24	Hebei	Yongfa Coal Mine, Zhangjiakou city.	Rain storm and flood.	16 dead	Township and village mine; check not passed; to be closed.
06-20	Heilongjiang	Chengzhihe Coal Mine, Jixi city.	Blast	124 dead	State-owned.
05-30	Liaoning	Guanshan Coal Mine, Beipiao Mining Company.	Blast	14 dead	State-owned.
05-26	Hunan	Qingshu Coal Mine, Loudi city.	Gas buildup	15 dead	Township and village mine with permit.
05-23	Heilongjiang	Jiacheng Coal Mine, Shuangya city.	Fire	17 dead, 4 survivors	Privately run, check not passed yet.

*APPENDIX—LIST OF COAL MINE ACCIDENTS IN CHINA, 2002—CONTINUED*

[In terms of fatalities, accidents are categorised into three types: serious—3 deaths or above; very serious—10 deaths or above; extremely serious—30 deaths or above. The following table excludes "serious accidents."]

Date (mm-dd)	Province/Municipality	Name and Location	Type	Fatalities	Mine ownership/Legal status
05-15	Hunan	Xinyuan Coal Mine, Loudi City.	Gas buildup	18 dead	Township and village mine; city and county check passed; provincial check not passed yet.
05-15	Hunan	Hongqi Coal Mine, Shaoyang City.	Water leakage and flood.	12 dead	Township and village mine with permit.
05-04	Shanxi	Fuyuan Coal Mine, Hejin city.	Water leakage and flood, followed by fire.	21 dead, 2 survivors	Township and village mine without permit; cover-up attempts by mine boss.
05-04	Guizhou	Shaft in Liying Village, Bijie District.	Blast	23 dead	Privately run without permit.
05-04	Hunan	Saihai No.2 Mine, Loudi City.	Gas buildup	13 dead	Township and village mine with permit.
04-25	Hebei	Linxi Coal Mine, Kailuan Mining Bureau, Kailuan City.	Roof collapse	11 dead	State-owned.
04-24	Sichuan	Huashan Coal Mine, Panzihua Mining (Group) Co. Ltd., Panzihua City.	Blast	23 dead	State-owned.
04-22	Chongqing	South Mine, Zhongliangshan Coal Field and Gas Company.	Gas buildup	15 dead	State-owned.
04-19	Shanxi	Hanjiagou Village 7.1 Coal Mine, Changzhi City.	Blast	12 dead, 12 survivors	Township and village mine with permit.
04-08	Heijongjiang	Donghai Coal Mine, Jixi Mining Bureau.	Blast	24 dead, 14 seriously injured, 23 injured.	State-owned.
03-29	Henan	Xinfeng Mining Bureau No.2 Mine, Xuchang City.	Blast	23 dead, 3 injured	State-owned.
02-28	Liaoning	Sanduhao Coal Mine, Fuxin City.	Fire	22 dead	Township and village mine with permit; 3 dead, 19 missing, presumably dead.
02-11	Inner Mongolia	Hongqi Coal Mine, Hulunbeierkeshi City.	Fire and carbon monoxide poisoning.	14 dead	Township and village mine; check passed.
01-31	Chongqing	Nantong Mine, Nantong Mining Bureau.	Gas buildup	20 dead, 2 injured	State-owned; 4 dead, 16 missing, presumably dead.
01-28	Hunan	Shantangchong Coal Mine, Hengyang City.	Blast	14 dead, 6 injured, 2 survivors.	Township and village mine; 3 dead, 11 missing, presumably dead.

*APPENDIX—LIST OF COAL MINE ACCIDENTS IN CHINA, 2002—CONTINUED*

[In terms of fatalities, accidents are categorised into three types: serious—3 deaths or above; very serious—10 deaths or above; extremely serious—30 deaths or above. The following table excludes "serious accidents."]

Date (mm-dd)	Province/Municipality	Name and Location	Type	Fatalities	Mine ownership/Legal status
01-26	Hebei	Nuanerhe Coal Mine, Chengde City.	Bblast	28 dead, 12 injured	State-owned; 19 killed in the first blast; 8 killed in the second blast the next day, and 1 missing, presumably dead.
01-21	Hubei	Tanjiadong Coal Mine, Jingzhou City.	Fire	12 dead	Township and village mine; check passed.
01-14	Yunnan	Shuijie Village, Wenshan Zhou.	Gas buildup	25 dead (7 women)	Privately run with no permit.

Sources: China Labour Bulletin, State Administration of Coal Mine Safety Supervision (SACMSS at <http://www.chinacoal-safety.gov.cn>) and State Administration of Work Safety (SAWS at <http://www.chinasafety.gov.cn>).

PREPARED STATEMENT OF PETER MCNESTRY

DECEMBER 10, 2004

The question of safety in coal mines is very important to me both as a person and as someone who has been at the forefront of mines safety for the greatest part of my life. From working as a miner, to supervising miners, to representing miners at the UK, European, and world level.

I was employed as a safety official to ensure the good practices introduced years before were maintained and improved upon.

It seems important that lessons learned in mining from years of mistakes need not be repeated, that such lessons could be passed on, and used by others to everyone's advantage. Producing such a process of assimilation has not always proved successful.

In the UK, each mine disaster was the subject considered by an inquiry, Parliamentary select committee, or Royal Commission. The findings of these hearings produced reports with recommendations culminating in changes to regulations and avoiding repetition of past errors.

Historically, there was no magic formula to avoid mining accidents or disasters. Once they occurred, it was not immediately apparent to those involved at the time what actions could have prevented them.

The UK had more than its share of mine disasters, involving explosions, flooding, gas outbursts, fires, and roof falls.

Explosions do identify as the most violent form of coal mine disaster and usually they are the cause of the greatest loss of life. In the UK some 144 methane/coal dust explosions caused major losses in life. These had reduced to six in the 1960s and one in the 1970s in which five lives were lost.

In hindsight, we can recognize how each of those explosions were caused (in some, doubts remain) and how the authorities acted to remove or reduce the cause. One disturbing point has to be the time taken from identifying a cause to introducing the solution. From a UK position many of these solutions now exist; so how do we encourage a transfer of that knowledge?

From 1935 to 1938, a Royal Commission took evidence from witnesses, considered many reports and eventually arrived at a conclusion. Unfortunately the war years intervened, and it was not until some time later that the UK Parliament passed the 1954 Mines and Quarries Act.

This Act and accompanying Regulations led to a dramatic reduction in the fatal accident rate from 0.24 in 1955 to the lowest rate of 0.03 in 1987/88 (per 100,000 man shifts). The two main elements that were maintained and improved upon were a statutory responsibility for inspection and reporting upon the condition of each working district—this being completed every 4 hours.

Also maintained and improved was a provision for the workforce to appoint a workman's inspector who shall have the authority to inspect workplaces and make written formal reports which must be made available to the Government inspector.

This Act contained provisions relating to Management and Control, Surveying, Plans, Ingress and Egress, Roads, Supports, Ventilation, Fire and Rescue, Training, Dust and numerous other provisions all relative to historic findings from past mistakes.

Whilst recognizing there may exist a different system of administration in China an offer to help reduce the accident rate in their mines by an exchange of existing safety knowledge seems the right and proper thing to do.

PREPARED STATEMENT OF LEO CAREY

DECEMBER 10, 2004

My name is Leo Carey. I am the Executive Director of Government Services for the National Safety Council (NSC). I am also the NSC's project director for the project to improve mine safety in China. I am here today to discuss that project. I speak only representing the NSC as the implementer of the project and do not speak for or represent the U.S. Department of Labor (DOL) or the DOL's Bureau of International Labor Affairs (ILAB).

First let me provide some background on the NSC. Founded in 1913 the National Safety Council has been working for generations to protect lives and promote health with innovative programs. In short, we are safety and health advocates. Our fully stated mission is "to educate, protect and influence society to adopt safety, health and environmental policies, practices and procedures that prevent and mitigate human suffering and economic losses." We are not a government agency but we have been chartered by the U.S. Congress to be safety and health advocates for the Nation, a charge that is both a prestigious honor and tremendous responsibility. We have over 45,000 member organizations and several thousand individual volunteers who contribute to and support the efforts of the Council.

The NSC responded to a DOL solicitation for cooperative agreement applications in August of 2002. The solicitation requested that applicants develop and implement a program to improve mine safety in the People's Republic of China. The announcement said that the agreement would be actively managed by ILAB and that applicants were strongly encouraged to form partnerships with Chinese organizations to submit a joint proposal. The program scope was identified as (1) Institutionalize the training of government and mine personnel in mine rescue techniques; (2) Strengthen the capacity of government personnel to promote workplace safety and health in Chinese mines; (3) Train miners and mine operators in mine safety methods and practices; (4) Improve the enforcement of work safety laws and regulations; and (5) Develop pilot projects with selected coal mines.

The successful applicant would be required to travel to China with USDOL officials on a project design mission trip, draft the project design and submit a project design document to DOL for approval.

The NSC submitted an application and was informed that the application was selected by the DOL on September 26, 2002. Subsequently, in February, 2003 the NSC traveled to China with DOL officials on a design trip. The project document was prepared, submitted to DOL, and signed by representatives of the governments of the United States and China on November 3, 2003 in Beijing.

The project document called for the project to be for 48 months, (9/30/03 to 9/29/07) with the USDOL funding set at \$2,289,898. The NSC had identified its Chinese partners as the National Center for International Exchange and Cooperation (NCIEC).

The project objective is to improve safety and health conditions of underground coal mines by:

- Improving the mine rescue system
- Improving overall government enforcement and inspection system
- Improve mine conditions through elimination of safety hazards

The project includes the following components:

(1) Mine Rescue—Under this task, activities will focus on developing an improved mine rescue capability for Chinese coal mines. The project will focus on improving the Mine Rescue Command Center as well as specific training for trainers (who will directly train rescuers from the pilot mine group) and management personnel involved directly in mine rescue activities. The objectives for this task will be achieved through the following activities: (a) technical visit to the United States on mine rescue technology and equipment, systems and procedures, (b) Site assessment and data gathering, (c) a symposium in China on improving the central mine rescue system, and (d) training trainers, management personnel, and selected mine rescue team members assigned to the Yangquan Mine Group in mine rescue techniques

and procedures. Training of Yangquan mine rescue members will be evaluated as a part of the pilot activity.

(2) Improving the Capability of Government Enforcement Personnel—The objectives of this task will be achieved through the following activities: (a) a technical interactive exchange visit to the United States focusing on the inspection system and training for government inspectors, (b) developing recommendations and course materials, with particular emphasis on accident investigation, and better dissemination of safety and health information to mine operators and miners, (c) baseline data gathering and site assessment, and (d) training of inspectors using the train-the-trainers as well as direct training method.

(3) Improve the Enforcement of Coal Mine Safety Laws and Regulations—This task will focus on identifying weaknesses, and making recommendation for improvements, to the overall statutory and regulatory system relating to coal mines in China. The objectives for this task will be achieved through the following activities: (a) development of a comparative analysis of China's mine safety laws and selected regulations as well as procedures to promulgate laws and regulations, (b) a technical exchange to the United States to focus on the legal and regulatory policy framework of the United States, and (c) the development of recommendations for establishing an accountability and audit system to determine the effectiveness of enforcement at local levels.

(4) Training of Miners and Mine Operators—This task will focus on making improvements to the system in China for insuring safety in mines. The training will emphasize how managers/section leaders understand and implement management systems to ensure proper management of safety in mines. In addition, training will also focus on hazards that are the major causes of mine fatalities in China. The objectives for this task will be achieved through the following activities: (a) pre-training site assessment at Yangquan Mine Group to establish baseline data for safety conditions in a representative Yangquan mine, (b) development of training materials which will incorporate safety management systems training as well as training in specific mine hazards, (c) training of mine managers/section leaders and trainers, and training of miners at one or two Yangquan mines; and (d) interactive discussions in the United States.

(5) Pilot Project—This task will focus on evaluating activities related to improving mine rescue, improving the capability of government inspectors, and training miners and mine operators. The objectives for this task will be achieved through the following activities: (a) organizing a site assessment group which will be the responsibility of the overall assessment of safety conditions in the pilot mine before and after training, and (b) performing safety assessments of trainees before and after training (this will involve mine rescue trainees, government inspector trainees, and mine operator/section leader and miner trainees).

That describes the project. We have received excellent cooperation from ILAB, MSHA, from the U.S. Embassy in Beijing, from our partners in China the NCIEC, from SAWS at the national and local level, from the Mine Rescue Command Center and from officials at the Yangquan Mine Group and the North China Institute of Science and Technology.

