

SUMMARY AND COMMENTS ON THE WORKSHOP

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NIOSH is to be commended for sponsoring what is probably one of the first meetings to address the issues of respirators in the workplace. John Froines referred to my testimony at the NIOSH hearing about a month ago. I commented that we had discussed 30CFR11 and its inadequacies, and we had held meetings. Yet, not once had anyone discussed the worker out there who is wearing the respirator everyday. Significantly, that perspective is finally coming into our discussions.

I would like to review a scenario. On two occasions, I gave a speech immediately following Neil Armstrong. I am sure you are familiar with his accomplishments. I struggled to bridge his accomplishments with discussions among top safety professionals in the country's largest 160 corporations. I found two factors that might be important here. My perspective focuses on the bottom line. First, Neill's successes in a Federal Agency were largely based on two things: (1) NASA did not have to worry about the regulatory process, and (2) NASA did not have to deal with the low bidder. This relates, in a way, to those professionals in the work environment whose concern is the health and safety of the worker. In that sense, I would like to contrast NASA's and Neill's success with that of the occupational safety and health profession. We, on a scale of 0 to 100, can do no better than zero, which means no injuries and no illnesses. Thus, we always deal in negatives. That is the reality in the working environment. From that perspective, let us examine this workshop.

At the opening meeting, Dr. Froines and the panel members established a basis for this workshop. Two principal categories of information emerged. First, data have been generated that can lead to significant improvements in 30CFR11. For example, the report on the testing of self-contained breathing apparatus in the firefighting situation does provide real perspective and useful information. On the other side, we have seen new data--some emerging areas of interest that deal with fundamental problems in the workplace, particularly the psychological and physiological aspects of respirator use.

You might find it interesting to consider how the data have been generated. Forty-eight percent of the papers presented at this symposium were from our foreign colleagues. That is probably a record in the respirator research in this country. However, several negatives can be found. Respirator manufacturers at this conference--and 176 people registered--represent 13 percent of the registrants, or 22 people; and we have heard very little from them. On the other hand, government represents 29 percent of these people; and U. S. industry--the users of the products--represents 21 percent. Unfortunately, we have heard very little from them. I suggest in future meetings that the opening panel discussion include a respirator manufacturer who reviews research and development efforts.

Previously, I was associated with a personal protective equipment manufacturing company, and I can tell you the realities of the problem. If I want to develop a new respirator facepiece, I will need an absolute minimum of 18 months and a lot of money. The problems with 30CFR11 today and the realities of the marketplace are that respirators are principally sold in this country as a commodity. The purchasing agent buys on price. For a manufacturer to spend substantial sums of money to develop and market a product that has a clearly superior performance is not worth the effort because NIOSH certification provides nothing but a pass or fail against minimum standards. What incentives exist for providing a superior product to a workman? You could not sell it, in most cases.

Another significant issue at this workshop is the absence of MSHA. MSHA, created by the Mine Safety and Health Act of 1977, is basically the equivalent of OSHA in the mining business. MSHA was created, as was OSHA, in the Department of Labor. The regulatory and legislative authority of 30CFR11 is the Mining Act, not the OSHA Act. The Advisory Committee, to which I belong and which reports to NIOSH, was created by the Mining Act.

You may ask why it is important that MSHA be present? A gentleman from MSA yesterday raised the question of special respirator needs in the mining environment, and that is one obvious reason. The other reason is that many people throughout this conference have noted the lack of research monies available from the Federal Government to develop data necessary to enhance worker protection with respirators. Under the Mining Act, NIOSH has substantial funds. The Mining Committee has a specific initiative to attempt to generate quality grants in such areas as respiratory protection. Grant monies are available, and the Committee reviews those grants. In addition, NIOSH, within the Division of Respiratory Disease studies here in Morgantown, has substantial additional research funds in the mining areas and in mine health. What better place to apply some of the work begun by Dr. Raven and his associates than to the American workers who probably exhibit one of the highest rates of chronic obstructive lung disease--the American coal miner? Here is a place to apply, against an excellent existing data base, much of the information that you are trying to develop at this workshop. An approach in that direction may be fruitful in providing resources and in developing programs.

Some effort has been made to expose us to reality through the testimony of two steelworkers this morning. Yet, I still am not particularly satisfied that we grasp the reality of the respirator user. As an example, we are ostensibly to deal with what is wrong with 30CFR11 and to determine what research needs to be done. We have discussed here, as we have many times, that under 30CFR11 the pesticide respirator is not tested with a pesticide. I submit that the related question is, "So what?" What is wrong with respirators in the field when they are used properly? What are the real field problems? What information do we need to deal with those issues?

A recent experience showed me the realities of this business and its relationship to those steel workers. The company for whom I now work received the major contract to perform one of the largest environmental hazardous waste monitoring programs ever conducted. This is the Love Canal program. Probably the worst problem we had at Love Canal was going into storm sewers and sampling sediments for toxic organics. Some 82 toxic substances were known to be present, and some had high dioxane levels. For reasons that are not necessary to review here, I was the one who went into the sewers for 4 days. I wore three layers of clothing, all sealed up, and a self-contained breathing apparatus for 12 hours. It was 95 degrees outside.

I appreciate what those steelworkers were saying this morning. The respirator is not the only problem in the work environment, and I suggest that each of you may want to do something when you get home. (One individual in the Division of Safety Research routinely does this.) If you sell respirators, work on respirators, or do research related to respirators, go back to your office, put on a respirator in the morning, and do not take it off until you get home at night. Wear it all day. If you jog, wear it. If you play tennis, wear it. This experience will make a believer out of you. When someone asks why you are wearing a respirator, explain to them; but do not take it off. You will discover another problem associated with respirator use.

With that brief review, let me highlight issues that have emerged this week. First, reports of studies indicate that through certain sorbent-type cartridges, cyanogen was generated before breakthrough of hydrogen cyanide occurred. That same paper indicated, as many manufacturers know, that many charcoal sorbents contain heavy metals that are used for explicit pollutant sorbent purposes. In addition, we have felt-type particulate cartridges or filters that function because a resin is deposited on fiberglass or on other types of fiber media. I am concerned that no one apparently has considered what is coming through those cartridges that the individual you are protecting is breathing. That is the first time I have heard of the cyanogen issue. We protect workers against hydrogen cyanide but dose them with cyanogen. Is it not appropriate to consider that?

Second, the information on the adequacy of self-contained breathing apparatus in the firefighting situation is sufficient to provide a strong basis for NIOSH to begin revising 30CFR11 commensurate with those requirements.

Third, a major issue that we continually deal with is the inability to use air-purifying respirators for materials that have poor warning properties. It is extremely difficult and costly to provide supplied-air or self-contained breathing apparatus for materials such as TDI. One issue, which has been touched on here and which should receive top priority, is the development of end-of-service-life indicators for several such systems. Indicators would result in a much broader range of worker population using respirators, primarily because of the cost factor, and would require no major changes in 30CFR11. I consider that an extremely important development to be pursued.

With regard to quantitative fit, we need a perception of real protection factors in a real working environment. This comment relates also to a number of other medically related parameters pursued in trying to judge who should and who should not/cannot wear a respirator. The two speakers this morning from the steelworkers union are not typical examples. They work for one of the Fortune 500 companies with hygienists and occupational physicians on staff. Contrary to what they said or to their perception, their company does a good job.

Information indicates that less than 4 percent of the 5 million industries in this country have hygienists. Only 3,400 occupational physicians exist in the United States. Over 50 percent are over 55 years of age, and not enough occupational physicians graduate to replace those who retire. Less than 1 percent of the U. S. companies employ an occupational physician.

Thus, to believe that the vast majority of American workmen have the benefit of medical exams, quantitative fit, or even qualitative fit is absurd. The problem is that 80 to 85 percent of the workers do not know they need to wear a respirator. They also receive little or no training. For example, the Mining Committee recently received information on a study that NIOSH performed in a company in Indiana that produced silica flour. We believe that silicosis is a disease that takes many years to develop. Yet, the environment at that company caused 18-year-olds on their first job to develop clinical signs of silicosis in 6 months. Again, I suggest that situation is closer to reality than that which we hear, which we get involved in, or which we believe. I suggest it is important to begin to think about those people in the real world and to get involved with the vast majority of the working population who do not know how to wear a respirator, what it is, or why they might need it.

In conclusion, this workshop has been a unique and significant first step that must be continued. With the support, interest, and commitment of each of us, the effort will continue.