

ADDRESS BEFORE THE NIOSH RESPIRATOR RESEARCH WORKSHOP

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The most visible occupational **safety** and health issues are debated in the **courts**, the Congress, and the administrative hearing rooms of the **Executive** branch of the **government**. These issues capture media attention because they define the parameters of our **society's** commitment to worker **protection**. How many dollars will OSHA and NIOSH have to spend this fiscal year? Will there be any limitations on OSHA's inspection authority? Will small business be exempted from safety inspections? These questions were debated in Congress even as we met here today.

Almost weekly the courts make some pronouncement concerning OSHA's inspection procedures or **standards**. You are all familiar with the benzene decision which departed from other courts who told OSHA to be adventuresome in regulating amidst scientific uncertainty.

These are the decisions and the debates which the public most often hear **about**, but perhaps the most significant progress in protecting human lives is made in conferences like **this**. They are not held under the **klieg** lights with national news reporters following every word; but they do deal with the technical and scientific issues that determine how effective regulatory officials can carry out their **agency's** mission. The accumulated knowledge and shared ideas resulting from meetings such as this one will ultimately determine the fate of millions of American workers. I am pleased to see that not only do we have considerable expertise here from around this nation but we have the opportunity to draw upon the knowledge of our friends from other countries.

In issuing health standards to protect workers from exposure to toxic substances and carcinogens, OSHA has defined a role for respirators as one of the proper control **devices**. Respirators, as distinct from engineering controls or work practice controls, are **permitted** under four conditions:

- (1) To reduce exposure during the time needed to install engineering **controls**.
- (2) To supplement engineering controls and work practices which fail to completely reduce the hazard to the permissible exposure **level**.
- (3) During activity such as maintenance and repairs when engineering controls are not a feasible means of protection.
- (4) And, during emergencies.

Engineering controls are **unquestionably** the best method for effective and reliable control of hazardous substances because they act upon the source of emission. Once implemented, engineering controls protect workers **permanently**, if they are adequately maintained. Respirators, of course, do not eliminate the source of exposure and, by themselves, may not provide the required protection.

But because of the four situations I described, a large worker population must rely on respirators for protection. As OSHA issues more occupational health standards, the number of workers who will rely on respirators, at least temporarily, will **increase**. For instance, OSHA's standard for lead

exposure, which was recently upheld by a Federal appellate **court**, specifies a ten-year period before **primary** lead production **companies** must fully implement engineering controls. Thus, workers in these companies must rely on respirators for protection from lead until February 1989. Good respiratory protection is **now**, and will continue to be, a very important element in protecting worker **health**.

OSHA's standard regulating exposure to cotton dust also includes an important role for **respirators**. Employers are required to provide respirators at no cost to the worker. A respirator protection program must be instituted in accordance with specific **OSHA** requirements for proper selection, use, cleaning, and maintenance of the equipment.

Due to the high incidence of diminished pulmonary function among cotton textile workers, **OSHA** realized that **some** of the workers would be incapable of wearing negative pressure respirators. As a result the standard requires that an examining physician should determine if an employee could wear a powered air purifying respirator or any respirator at all. When an employer is relying upon respirators as the means of limiting worker exposure, **OSHA** requires that workers who cannot wear respirators must not suffer any economic loss. The worker must be offered the opportunity to transfer to another position, having a dust level below the permissible exposure level. A transferred employee must not lose any earnings, rights, or benefits as a result of the transfer.

The interplay between economics and respirator protection appears in several forms. Respirators seem to be substantially less expensive means of protecting workers than capital intensive engineering controls. Industries affected by **OSHA standards** have claimed that engineering modifications would cost hundreds of **millions of dollars**. There appears to be an economic incentive to use respirators instead of engineering controls. Recently, though, industries faced with **OSHA** standards have taken another look at respirators. And what they see is that a truly effective respiratory protection program (one that complies with **OSHA** regulations 1910.134) is not inexpensive. An adequate program must meet basic requirements for the proper selection, use, cleaning, and maintenance of respirators. **Employers** must ensure that respirators are worn properly all of the time and not abused. Employers are also required to assure that respirator facepieces fit. **OSHA** has estimated that the cost of a comprehensive respiratory protection program would be almost \$1100 per year for each employee.

Besides the issue of cost, there has been another kind of business reaction to respirator requirements. Last winter one large, multi-state cotton textile company actually promoted and assisted a **letter-writing** campaign by its employees. Congressional offices in Washington were flooded with **hand-written** letters, using suspiciously identical language, complaining about discomfort from respirators required by **OSHA's** newly implemented cotton dust standard. And this was in an industry that had fought for months against **OSHA's** engineering control approach to controlling dust, claiming that respirators were a much more **cost-effective** method.

Respirators are a little like birth control devices; the best one in the world **won't** work unless it's used. And to motivate workers to use this equipment we need better instruction and training. Some respirator manufacturers do not give enough information about their products to the wearer. This is critical when we consider that most employers are small businesses who have no safety and health staff to offer training.

The only available source of information to wearers in many cases is an instruction manual. This manual should tell the worker about the capabilities and limitations of the respirator. The manual should explain how to check the facepiece seal and how to use, **clean, store,** and inspect a respirator for defects. Simple maintenance and repair instructions should be given as well as scientific diagram and numbers for spare parts. The instructions for using disposable respirators are often printed on the shipping carton where it is not likely to be passed on to individual wearers.

Misuse or abuse of respirators is often due to lack of wearer training. Training materials should be compatible with the educational background of the wearers.

Dr. Jerry **Purswell**, OSHA's Director of Safety Standards, testified during NIOSH hearings on changes in its testing and certification program for personal protective equipment. Dr. **Purswell** set forth a number of principles necessary to assure workers of reliable and dependable respiratory equipment. I would like to mention some of the most important principles.

First, it is essential to increase the frequency of respirator inspection and testing. Perhaps manufacturers could issue reimbursement purchase coupons to NIOSH or another approving agency which would then obtain testing samples from any distributor it chooses using the coupons as payment. OSHA's field **staff** could assist **the approving** agency in securing respirators by also making these purchases at distributors throughout the country.

Second, OSHA believes changes should be made in the duration of respirator approvals. Currently, a respirator approved 40 years ago can still be used today. This curtails the incentive for innovation in technology. The duration of approval should be specific but varied for different types of respirators. Longer durations should be granted for more complicated or expensive equipment since users are not likely to replace it as often.

A **stop-sales-and-recall** procedure should be formally established. Current regulations have neither provisions for halting respirator sales nor for a recall of defective devices. A **stop-sales-and-recall** regulation should require a statistically significant number of respirators to be tested to determine the extent of the defect. If testing reveals defects that lead NIOSH to believe the respirator should not be used, approval should be suspended until the defect is corrected or a more suitable unit is developed. A panel consisting of governmental officials and independent respirator experts could review every case to determine whether stop-sales, recalls or **decertification** are necessary.

Under current rules, respirator manufacturers are allowed broad discretion concerning the stringency of their quality control plans and choice of factors to be inspected. This should be changed. Each manufacturer of a given type of style of respirator should be required to test the same **qualities, items, and functions.**

Many respirator manufacturers provide **only** one size of facepiece but one size is unlikely to achieve proper fit for individuals with widely different facial **characteristics**. There is presently no way to predict the adequacy of fit based on any facial **measurement**. There is a considerable need for research to determine the distribution of the facial dimensions of the **American** work population.

There is also a pressing need for uniformity in the user instructions provided by the **manufacuters**. A proper instruction manual should contain at least an explanation of the capabilities and limitations of a respirator. Proper fitting and use should be explained as well as methods of **inspection, cleaning, storage, and repair**.

This is a brief summary of the principles set forth by Dr. **Purswell**. His complete testimony is available from **OSHA** and is, I assume, in **NIOSH's** public **record**.

In the fields of occupational safety and health, technical knowledge and scientific developments are the currency of exchange. Regulators could have all the good intentions in the world, but without the necessary technical assistance, our efforts would be static. Your discussions in the next few days are important to government officials, to the safety and health professions, and most importantly, to American working men and women. We should never forget that our work is to conserve human life. What we do each day affects living people, precious to their families and friends. To me, that is the highest motivation for doing our best possible job.