

DON'T FORGET YOUR MUZZLE
THE RESPIRATOR WEARER'S PERSPECTIVE

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The aim of this paper is to describe and present for discussion the workers' views of respirators as we have dealt with them at the United Steelworkers of America.¹ At the outset it must be understood that the observations relied upon came from organized or union workplaces where, in many instances, there are prescribed procedures through collective bargaining agreements that are designed to deal with the initiation and implementation of programs dealing with protective devices such as respirators and mechanisms for resolving disputes over these programs through grievances and arbitration.

Among the factors that affect respirator usage at these workplaces are the identification and recognition of hazards that require control to reduce employee exposure, the applicable OSHA regulations, the types of respirators available, and the motivation, expertise and relationship between management and labor in developing, implementing and enforcing a respirator program.

HAZARD RECOGNITION AND CONTROL

The first thing that must be realized about respirators is that no one wants to wear one. Consequently, the emphasis from the worker's point of view is on not letting respirators into the workplace or once they are there, getting rid of them. They are viewed as burdens that interfere with work routines and require changes in habits or personal preferences that may be deeply ingrained in the employee and supervisory population. This instinctive reaction is consistent with the priority scheme for control of occupational health hazards, i.e., engineering, work practices or administrative controls and then protective equipment.²

Historically, of course, and today as well, where other controls are not in place, certain types of hazards usually gave rise to some types of "respiratory protection." Thus for many years in excessively dusty operations, employees wore improvised masks or handkerchiefs more for comfort than because of any health-related awareness. The same would apply where noxious gases were present, such as sulfur dioxide in smelting operations. In addition, before the OSH Act, employers in a number of companies that we represent, including the steel and smelter industry, provided respirators that were optional for employees to wear.

¹ The views expressed in this paper are in large measure those of the author based on my experience with the United Steelworkers of America and, therefore, they should not, unless specifically noted, be considered an official policy position of the Union.

² One major exception should be hazards that are not readily subject to other types of controls because they are unexpected, emergency situations. One example is CO gas in blast furnaces; yet the record in many cases illustrates that employees, even when the hazard is life threatening, do not use the respirators.

Since the passage of the OSH Act, greater attention has been focused on occupational health hazards of greater severity at lower exposure limits where the effects are not demonstrable for many years and where the risk, while statistically high, does not equally affect all workers in a given area. In addition, the engineering and work practice controls in existence are often not alone sufficient to reduce exposure to a safe level. As a consequence, more workers are wearing respirators, the use of respirators is more frequently mandatory, and the hazards are generally not readily apparent to the employee either in terms of immediate discomfort or readily apparent health effects. Consequently, resistance to respirator use has risen proportionately, confronting all interested parties with a new set of problems to work out.

APPLICABLE REGULATIONS/GUIDELINES

In the absence of specific requirements for respirators and detailed provisions for selection, fit and maintenance in respirator programs, it is our experience that most respirator programs are set up as follows:

1. Only one type and size respirator is available regardless of the exposure level or the different facial sizes in the workforce.
2. Employees wear them at their option.³
3. Employees are responsible for cleaning and maintaining the respirators in whatever facilities available at the plant unless the respirators are disposable ones.⁴
4. There are no regular inspections or evaluations of the effectiveness of the "program".
5. No attention is paid to fit of the respirator other than the employees happening to read and pay attention to the manufacturer's instructions if those are provided.
6. There are no policies limiting facial hair.

Even after OSHA adopted portions of the recommended ANSI guidelines as 29 CFR 1910.134, little change in the status quo ensued because agency policy and enforcement efforts were still in their infancy and the program's early emphasis was on safety hazards. In our experience, very few companies paid much attention to the respirator standard until more specific health standards were promulgated on a substance by substance basis.

³ ~~The~~ most common practice is to wear them around the neck, but I have seen them work on elbows and under hardhats.

⁴ At one plant several hundred employees had one basin and one brush to use to clean them.

For several reasons those standards have focused the union's attention on respiratory protection. Many of the issues in the hearings to set those standards revolve around the proper **exposure level**, methods of compliance and the feasibility of **compliance**, both technical and economic. To **date**, the OSHA standards, despite intense pressure on the economic front to place primary emphasis on respirators, have preserved the traditional industrial hygiene hierarchy that emphasizes engineering controls or substitution over protective equipment. As a matter of practical fact, however, respirators are the rule in virtually all the workplaces regulated by these new standards. For example, air samples for coke oven emissions at one of the best coke plants in the country still exceed the standard although to a much lesser extent than three years ago when the standard went into effect. Even more so, under the new lead standard, where the exposure limit went from 200 to 50 $\mu\text{g}/\text{m}^3$, respirator usage will be a long term **problem**. The position developed by the USWA in the **context** of these regulatory proceedings includes the following items:

1. Greater emphasis must be given to the proper selection of respirators which **may** include new designs for complex contaminants such as the gases and **particulates** associated with coke oven emissions.
2. The fitting of respirators must be more controlled than hit or miss, positive and negative fit tests. This problem includes the availability of facepieces of different sizes and fit-testing procedures that are more quantitative than qualitative.
3. An element of employee choice in the selection of the type of respirator, including a choice among several types of negative pressure respirators as well as the option to select a powered respirator.
4. Provisions for limiting time for respirator wear either by designating certain areas as break areas and providing time for using them or by averaging time of use based on the exposure level and protection factor of the respirator.
5. Determining whether an employee is able to wear respiratory protection and economic protection **for** those workers whose health has already been damaged to such an extent that they cannot wear currently available respirators.
6. Concern for the actual development and enforcement of a respirator program in the workplace where such questions as discipline and discharge for failure to wear a respirator or the unilateral imposition of a policy on facial hair can strain even the best of **labor-management** relations.

TYPES OF RESPIRATORS

The first three numbered paragraphs set out above deal generally with what types of respirators are needed, assuming that they must be used. Our experience in this area is relevant to those involved in the design and testing of respirators because they reflect the reaction of the ultimate users of the product, the workers.⁵

1. Coke Oven Emissions. The coke oven standard and its preamble, 41 FR 26744 and 29 CFR 1910.1029 (g) (12) (iii) call for NIOSH approval of a respirator specifically for coke oven emissions by January 20, 1979.⁶ To date, we know of no such respirator that has been submitted for approval in all likelihood because of unawareness of the need and also the limited size of the market. In addition, the respirator would require testing in the actual coke oven environment rather than in the lab in order to measure its effectiveness against the emissions. Some employers are, however, providing a limited number of employees with double cartridge respirators where exposure to gas is noticeable and employees have complained about it. However, where the particulate exposure in those jobs exceeds the recommended protection factor of the particular half-mask respirator used, then a powered air-respirator that does not remove the gases is "required."⁷ This respirator compounds the problem because the air flow created by the battery pack forces the gas right into the facepiece through the particulate filter.

⁵ Sole reference to the employer who purchases the respirator as the user is likely to lead to a great deal of confusion because in most instances the employer does not use the respirator. Rather, the employer is the purchaser for the ultimate user and the success of the respirator program depends largely on how or if the purchaser and user communicate with each other on the types of respirators needed and the structure of the respirator program needed to maintain the equipment and assure that it is used properly.

⁶ The standard defines the benzene soluble fraction of total particulate matter as an index for exposure to coke oven emissions and, therefore, the initial respirators were to be those approved for dusts and mists. However, the preamble recognized the scientific concern and the practical employee comments that protection was also needed from the gases and vapors either because they contributed to the risk or because of the discomfort associated with their inhalation.

⁷ The standard specifies that a powered respirator with a double cartridge can be used in this situation, but, to our knowledge, none is available. Other options might be limited use of a full-facepiece respirator or a supplied air or self-contained unit for certain job functions but they are not considered in the standard. This situation places both the employer and the employee in a dilemma.

⁸ In an arbitration decision at Bethlehem Steel's Sparrows Point plant in February, 1979 (Decision No. 2698), it was noted that "although the ... was designed to offer protection for three turns with simple cleaning, the Company, noting that it is a disposable respirator, decided to be sure that the employees were given a clean respirator each shift." Between 700 and 1,000 employees were given this same respirator every day at this one plant.

Instead of focusing on more sophisticated respirators that provide protection from the total environment in a manner that is also as comfortable as possible, coke oven respirator design has gone in the opposite direction and has emphasized **getting** around the **standard's** limitations on single use respirators. This has resulted in the approval of a controversial 3-day reusable respirator that is, in fact, treated as a single use **respirator**.⁸ This respirator received **NIOSH** approval for coke oven emissions in 1977, but like other particulate respirators, it does not filter out gas or **vapors**. In short, the coke oven problem is still unresolved and may even be going backwards.

2. Respirator Fits. It has been our consistent position that **quantitative** fit-testing is necessary for the proper initial fit of the appropriate respirator facepiece. **Once** the right size is selected, then the employee can do a daily pressure test to assure that the respirator is on properly before the start of the shift and periodically **thereafter**.

Rather than enter into the current technical questions raised about the various types of fit tests which will be discussed at this conference, I would offer the following observations about the practical value of the various fit tests:

(a) The more objective the measure the less likely opportunities arise for accusations about faking the tests either to pass them and thus keep or get a job or fail them and thereby get out of an undesirable **job**.⁹ Therefore, from a labor relations point of view, the more objective the test, the fairer for both parties because it reduces the **possibility** of confrontations over improper discipline or trapping employees on charges of not accurately reporting the respirator fit.

(b) The quantitative approach can also be used to evaluate the various filter media against the actual workplace exposure rather than a chamber test. For example, prior to promulgation of the coke oven standard at least one major steel company did such sampling on the batteries to evaluate regular versus high-efficiency filters and to select a respirator that fit most of the employees. More of this type of testing is needed to get actual use data to improve the design and selection of respirators.

(c) Quantitative testing can provide greater certainty in proper respirator fit as the working population becomes more varied. Particularly, the entry of women in larger numbers in the workforce has finally prompted the production of various size facepieces in the **same** model. Similarly, these test procedures can give a periodic overview on respirator fit as facial **configurations** change due to injury, age, dental work and possibly even personal preference, such as beards and moustaches.

⁹ **Where** the employee self-tests with positive or negative pressure, these questions usually do not arise since no one checks the test unless such tests are the sole way to determine fit and then it is only the **employee's** word that a different facepiece size is needed. Similar problems arise where qualitative fit tests such as irritant smoke or isoamyl acetate are used although the former test substance removes some of the subjective response.

3. Employee Choice. One of the key goals of a respirator program is to get employees to use the respirator. It is our experience that, as in many other workplace questions, allowing some employee input and choice makes a program more acceptable. Such considerations are generally not built into professional guidelines or regulations probably because it would never occur to the people charged with drafting that type of material that employees would be denied such a choice if it appeared reasonable. Yet, the key issue in the arbitration case referred to supra footnote 8 was the fact that at least one employee wanted to keep the respirator that was to be replaced by the "disposable" one because material from the "disposable" one came off in his mouth. This request was denied by the company and the company prevailed in arbitration because the employee could get as many replacements for the "defective" disposable respirator as needed during the shift and the only choice he had by regulation was between a powered versus non-powered respirator. Having proven its point in winning the arbitration, the company turned around and provided an option on the type of negative pressure respirator anyhow.

In newer health standards such as those for lead and coke oven emissions, OSHA has provided for an employee option to select a powered air-purifying respirator rather than a negative pressure one. The availability of this choice¹⁰ has pointed up a series of operating problems that stem in part from the design of these respirators. The major problem is recognized in the preamble to the standard--temperature extremes adversely affect the ability to wear the devices, thereby limiting their usefulness; and it is claimed that the air flow has caused colds and earaches. The equipment is still fairly cumbersome for those doing manual labor that requires a great deal of mobility. The particulate filters do not remove gases. The equipment is much more expensive and requires greater maintenance than the negative pressure respirator. Of the two designs--facepiece and hardhat--that we are familiar with, the employee again is limited to the type the employer selects, thus potentially limiting the number of employees who might wear this respirator if they could choose between the two designs.

In summary, the design and selection of respiratory protection, must, in our view, pay greater attention of the actual work environment and also be provided in a manner that allows the captive user some say in the process.

¹⁰ It has taken several years for employers to even begin to comply with the employee option. Several steel companies ignored it, others interpreted the standard to subordinate the option to the employer's right to select the respirator and one tried to get a variance from having to comply with it because the other respirators were adequate and employees might harass them by too many requests. While the variance was not granted, the standard was interpreted to make clear that the employer could have a test period prior to selection of the respirator and that if requests were made for more respirators than were available, the employer could take a reasonable time in providing the additional respirators.

LABOR/MANAGEMENT AND RESPIRATOR PROGRAMS

The remaining three items that made up the general position of the USWA on respirators deal primarily with the integration or rejection of regulatory requirements in the labor/relations system in the workplace.

1. Limits on Respirator Use. Until the recent OSHA lead standard,¹¹ none of the regulations gave any guidance as to how long respirators must be worn during a workday in order to provide protection yet not unduly stress the wearer and whether the timeframe, if any, differed with respect to whether the regulated substance was or was not a carcinogen. The problem was compounded by an agency enforcement policy that resulted in citations and fines for an inadequate respirator program whenever employees were seen without their respirators on their faces.¹² This, in turn, prompted employers to go on campaigns or set up quota systems to assure respirators were worn all day and to document an enforcement program which, as stated in Note 12, is a partial defense. Once such a cycle is set up, the union, believing the actions to be arbitrary and unreasonable, has very little recourse but to take them to grievance and arbitration if necessary.

Rather than engage in these lengthy and possibly futile internal disputes, the USWA position has been to try to get the enforcement agencies to balance the protection goal with one of reasonable enforcement especially where the employer has set up an objective test to determine where respirators can be removed.¹³ It would be our hope that those engaged in respirator research, design and approval would consider adding their experience to an equitable resolution of the dilemma such enforcement policies gave rise to for employers and employees by, for example, recommending maximum use times, or relating the protection factor concept to the advisability of averaging exposure levels over time to determine minimum time periods that the respirator must be worn in particular environments.

¹¹ That standard states that after a certain period of time, "no employer shall require an employee to wear a negative pressure respirator longer than 4.4 hours per day." 29 CFR 1910.1025(f)(1) (i).

¹² The employer might get the citation dropped if he could show that the cited incident was an isolated event and that he had a program for enforcing respirator use thorough discipline.

¹³ Apart from the lead standard, there is, as a result of our efforts, an administrative interpretation of the coke oven standard allowing the establishment of respirator break areas within the regulated area. We are currently pursuing, to date unsuccessfully, a similar approach in an enforcement context at one plant subject to the arsenic standard.

2. Evaluating Ability to Wear Respirators, In 29 CFR 1910.134(b)(10), OSHA states **that**"

"(10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator **user's** medical status should be reviewed periodically (for **instance, annually**)."

This **provision**,¹⁴ if followed, raises two main issues for us in the labor/relations area: how to determine whether an employee can wear a respirator **and**, if the answer is **negative**, how should that employee be handled as to continued employment. On the first point it appears that systematic, basic research needs to be done to link measures of pulmonary or cardiac **insufficiency** with respirator usage to see if any of them can be predictive of problems with respirators. In addition, combined factors such as stress and heat exposure need to be studied to see what impact, if any, they have on the health of an individual required to wear a **respirator**.¹⁵

The second point involves the societal responsibility not to discard otherwise able employees from jobs because they cannot wear respirators, or, if they are disabled such that they cannot work, to compensate them fully for that disability. One of the collective bargaining goals of the **USWA** is to secure earnings protection for employees with a work-related disability who must be transferred to lower paying jobs because of that disability. Limited protection in this area exists in our basic steel and aluminum contracts.

3. Implementation of Respirator Programs. Both under OSHA and in labor/management relations the employer has the responsibility for establishing and maintaining a safe and healthful workplace. This includes the initiation and enforcement of reasonable plant safety and health rules for protective equipment such as respirators. There are two main rights that the Union would assert with respect to **management's** role. The first is the right to discuss the proposed rule before it is implemented and the second is to see that it is reasonably and fairly applied. Where such concerns **are** not resolved **cooperatively**, they are raised in the grievance and arbitration process or through use of an OSHA inspection.

¹⁴ Since the provision used "should" and not "shall", it is generally interpreted as advisory and not a mandatory requirement. Secretary of Labor v General Electric Co. 1977-79 CCH OSHD P22,242 (ALU dec.)

¹⁵ A common belief of employees, particularly older employees, is that the added physical stress from breathing through a respirator for long periods of time, especially in a hot environment, will increase the likelihood of a heart attack.

Out of all the elements of a respirator program, I have selected the issue of facial hair policies to illustrate the relationship between respirator design and enforcement and labor/management tensions.

The following quotes are from three different arbitration cases dealing with facial hair policies prompted by employer reliance 29 CFR

1910.134(e) (5) (i):¹⁶

- (a) "For the purposes of these proceedings, it has been sufficiently shown that PFB (psuedo-folliculitis barbae) is a skin disorder that primarily affects black males and is most common among them [footnote omitted]. A rule or policy that requires employees to shave by razor or depilatory even for a safety purpose is subject to a serious question of discrimination since it can act to disqualify an otherwise qualified black from employment solely on the basis of a genetic characteristic peculiar to his race, unless, of course, it was justified by a legitimate business purpose.

. . .

Surely, the Company had the responsibility of insuring that its employees were able to obtain a proper facial seal in the use of the respirator. However, it refused to provide empirical tests by the application of the gas mask to the grievant's face to determine whether or not it would contain and retain a suitable seal." Niagara Mohawk Power Corp. 74 LA 58 (1980).

- (b) "The issue here is whether the act of the Company in abolishing beards and sideburns and regulating mustaches that interfere with the proper facial seal is an unreasonable encroachment upon the personal freedoms of the individual employee.

. . .

The company acted with prudence and reason in issuing the rule banning facial hair that interferes with a proper facial seal and then acted with caution and care in its implementation. The Company not only had a right to issue the rule; it had an obligation to do so." American Smelting and Refining Co. 69 LA 824 (1977)¹⁷

¹⁶ "Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses..."

¹⁷ In this case, no fit testing was required but ironically, the corporate policy was partially in response to an OSHA citation for facial hair at another ASARCO plant and that citation was vacated because OSHA did not test to see if the respirator was sealed properly even with facial hair. Secretary of Labor v ASARCO 1979 CCH OSHD P23, 695 (Review directed).

- (c) **"The** real issue concerns the right of the Company to determine by a visual observation only if the facial hair of an employee would interfere with the positive seal of a fresh air mask.

. . .

Accordingly, it is my opinion that since the Grievant did **not** agree with **Kelly's** decision that his facial hair would prevent a positive face seal of the **fresh** air mask, the Company had the right to test the Grievant for a positive seal which would be conclusive and thereby give the Company the absolute right to require the Grievant to remove such facial hair interfering with a positive **seal**. **However**, this was not done **and** it was arbitrarily decided by Kelly that the **Grievant's** facial hair would prevent a positive seal of the fresh air mask despite the clear evidence, including the testimony of Mr. Kube, that facial hair does not always prevent a positive seal and the only manner to determine if the employee can obtain a positive seal is by an actual **test**." Phillips Petroleum Co. 74 LA 900 (1980).

As these decisions indicate, arbitrators are making decisions that are very important not only for individual employees and the union goal of reasonableness in developing and enforcing plant rules but also for the substantive requirements of respiratory protection. All the parties to such disputes need more research and guidance as to whether and how to integrate the strictures of a regulation for workplace protection with the diverse characters who work there.

In summary, those who are charged with the responsibility to design and to regulate in the area of **respiratory** protection must also be aware of and be able to respond to the problems and questions such devices provoke in the work **environment**.

CONCLUSION

The discussion in this paper is intended to highlight for those in the field of respirator research and design some of the major concerns **of** the user population that is represented by the U8WA. Undoubtedly, it is obvious that the issues we face are very practical ones that must be resolved before respirator usage can become tolerable even as a partial or interim solution to the control of occupational hazards.