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NIOSH Docket Office
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As a safety professional involved in the administration of respiratory protection programs for our company, I am responding to your call for public comment concerning the adoption of final rule, 42 CFR Part 84.

It is interesting that in a year when the Occupational Safety and Health Administration levied substantial fines on two painting contractors for lead paint/respiratory protection violations, NIOSH is considering easing the requirements for respirator testing and certification. In essence, that is how we view some of the proposed changes in 42 CFR Part 84. One can only wonder how these conflicting messages are being interpreted by companies throughout the country.

While we fully understand the need to establish new respirator certification regulations, and support NIOSH's efforts in this area, we believe there exists serious shortcomings in the proposed rule.

NIOSH has stated it expects several benefits to result from implementation of the rule, among which is an improvement in the respirator user's ability to easily discern the level of protection that can be expected when using a respirator. A second anticipated benefit is that 42 CFR Part 84 will enable classification of filters on the ability to inhibit the penetration of particulates of the most penetrating size. Central to meeting these objectives is the establishment of new procedures concerning particulate filter testing. And that is where we find the proposed standard to be most flawed.

Specifically, we believe the rule is deficient in the areas concerning the proposed challenge agent used in the test and the length of the test itself.

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Under the proposed rule, a "liquid and solid" respirator filter is tested against a challenge aerosol. Because workers could potentially be exposed to thousands of aerosols, NIOSH has indicated that their intent is to test with the most penetrating challenge aerosol known. Under the proposed rule, this is a polydispersed and neutralized, cold-nebulized dioctyl phthalate (DOP) challenge aerosol.

We believe the challenge aerosol should remain monodispersed, thermally generated DOP, which is required under the current 30 CFR Part 11 regulation. Thermally generated DOP has been the industry standard for classifying HEPA filters for more than 20 years, and NIOSH scientist have stated that it delivers the same filter penetration test result as cold-nebulized DOP. Further, thermally generated DOP has a long-standing and proven track record as a discriminating test agent. Cold-nebulized DOP does not. And that is what concerns us most about the use of cold-nebulized DOP.

To date, NIOSH's comparative testing between thermally generated DOP and cold-nebulized DOP has been limited to mechanical HEPA filter media. Testing has not been conducted by NIOSH using cold-nebulized DOP on other classes of filters, including the widely used electrostatic-type filters. Despite this lack of test data, NIOSH believes that testing using cold-nebulized DOP or thermally generated DOP will deliver the same result. We believe it is this thinking that is deficient and where potential compromises in worker safety begin.

Industry testing of electrostatic filters by respirator manufacturers shows there is a difference in test results depending on which type of DOP is used. So much so that some electrostatic filters might easily pass the filter efficiency requirements using cold-nebulized DOP, but fail against thermally generated DOP. In fact, test data exists that shows thermally generated DOP to be more penetrating than cold-nebulized DOP.

In short, this isn't just a debate over DOP. Rather, it is an argument over a certification test that is intended to use the most penetrating particle size to ensure the safety of employees everywhere. And in its current form, the proposed test permits NIOSH to overstate the efficiency of electrostatic filters, which are known to degrade with exposure. And that alone should warrant changes to the proposed rule.

To solidify our case, we would like to voice a second concern we have in regard to filter testing. Our point of contention has to do with the duration of the filter test itself. In industry tests, electrostatic filters have demonstrated a continuous decrease in filtration ability with exposure to the challenge aerosol when the arbitrary NIOSH test limit of 200 milligrams loading is reached.

We were disturbed to learn that in the proposed rule, filter testing will be stopped after an arbitrary load limit, well before the maximum percent penetration is reached. While this may not be a factor with mechanical filter media, which load with time but do not decrease filter efficiency, it is a concern with regard to electrostatic filters. Previous NIOSH studies reveal that electrostatic filters show a dramatic decrease in efficiency using not DOP, but common industrial aerosols like pesticides and coke oven emissions.

What we find truly unacceptable is that our employees, who may be depending on an electrostatic filter for respiratory protection, have no "indicator" that the electrostatic filter is losing efficiency (i.e. there is no "breakthrough" or "warning properties" that the user can detect through taste or smell). A test of longer duration would readily reveal this shortcoming. Doesn't it make more sense not to arbitrarily limit the aerosol loading time, but rather continue the test until filter performance levels off? We firmly believe this would be a better indicator of the minimum level of protection a worker can expect from a NIOSH-certified respirator. That is what NIOSH proposed in 1987, and we strongly recommend that it be included in the 1994 final rule. The benefit in product performance and worker protection would surely offset the slight increase in certification test time at Morgantown. Furthermore, it eliminates the debate over "cold" DOP or "hot" DOP as the test agent.

Lastly, we would like to comment on NIOSH's proposed system for certifying respirator filters. NIOSH proposes to have two certification classes for each efficiency rating: one for "solid only" particulates and another for "liquids and solids."

We believe it is clearly a tiered system of "better/best" protection, which relies on the user to identify the potential hazard as a "solid only" or a "liquid and solid" atmosphere. With such a system, the "solid only" certified filters are likely to be less expensive than their "liquid and solid" counterparts, perhaps encouraging their misuse in dust and mist environments. Clearly this is not in the best interest of protecting workers.

If NIOSH is to achieve its stated objective of improving the level of respiratory protection for all wearers, it could better meet this goal by requiring all filter media (regardless of efficiency rating) to meet the "liquid and solid" requirement. In doing so, the safety professional and worker would both know, for example, that the 99.97 percent efficient particulate respirator will provide protection to the highest level NIOSH requires.

If NIOSH is to achieve its objective of producing "significant improvements in the level of protection provided to wearers of respirators," we firmly believe that all of these concerns must be addressed before the final rule is adopted.

Thank you for your consideration.

Sincerely,

Barnett Sanders

P.S. Your efforts above will weaken a protection program just when it needs to be strengthened.