

occurrence when analyzing samples (Tr. 6/20, p. 35; Tr. 6/21, p. 181), that employers will not need to use the larger filter except in unusual circumstances.

As previously discussed, Section 8(c)(3) of the Act [29 U.S.C. 657 (c)(3)] requires employers to notify promptly any employee who is exposed to levels in excess of the PEL. The final asbestos standard requires the employer to notify each employee in writing of that employee's measurement within 15 working days after receipt of the results of any measurements required under paragraph (d) of the standard, whether exposure measurements were above or below the PEL.

As noted earlier, monitoring is carried out for the purpose of determining what measures are necessary to ensure employee protection in a given operation. The monitoring requirements in this standard are similar to those found in other toxic substance standards promulgated by OSHA [see vinyl chloride, acrylonitrile, coke oven emissions, arsenic] and these standards have been met without difficulty, thus indicating that compliance with the asbestos rule should also be feasible.

The exposure monitoring provisions require the employer to determine the exposure for each employee exposed to asbestos. However, this does not necessarily require separate measurements for each employee. If a number of employees perform essentially the same job under the same conditions on the same shift, it may be sufficient to monitor a fraction of such employees to obtain data that are representative of the remaining employees. Representative personal sampling for employees engaged in similar work and exposed to similar asbestos levels can be achieved by measuring that member of the exposed group who can reasonably be expected to have the highest exposure. This result would then be attributed to the remaining employees of the group.

In many specific work situations, the representative monitoring approach can be more cost-effective in identifying the exposures of affected employees. However, employers may use any monitoring strategy that correctly identifies the extent to which their employees are exposed.

Paragraph (d)(2)(ii) contains a provision designed to eliminate unnecessary and redundant exposure monitoring. It permits employers who have monitored employee exposures to asbestos within the six-month period immediately preceding publication of this final rule in the Federal Register to forego the initial monitoring required by paragraph (d)(2)(i) if the results of

monitoring within this period have shown that their employees are not exposed to asbestos levels at or above the action level.

The (d)(2)(ii) provision simply makes clear that OSHA does not intend employers who have voluntarily performed employee monitoring to be required to repeat such monitoring if they have reliable and objective data showing that their employees are not exposed to asbestos at or above the action level, which triggers several of the standard's provisions, e.g., medical surveillance, periodic monitoring, training. Thus, OSHA believes that paragraph (d)(2)(ii) will enhance the cost effectiveness of the standard's monitoring requirements without compromising employee protection.

5. Paragraph (e). Regulated Areas.

The final standard requires employers to identify as regulated areas any locations in their workplaces where there may be occupational exposures to airborne concentrations of asbestos above the PEL. The final standard prohibits eating, drinking, and smoking, in such regulated areas. In addition, only authorized persons may enter regulated areas, which are required to be clearly marked to ensure that employees are aware of these locations. Taken together, these provisions are intended to increase the standard's effectiveness by limiting the number of employees exposed above the PEL. The existing OSHA standard does not contain a provision for establishing regulated areas. OSHA stated in the proposal that it is considering establishing regulated areas at the proposed PEL's or at the action level (49 FR 14124).

Many commenters endorsed establishing regulated areas wherever there may be occupational exposures in excess of the PEL. Furthermore, they believed that regulated areas and limits on employee access into contaminated areas are appropriate and feasible methods of preventing unnecessary employee exposure to asbestos. (Exs. 312, 328, 90-138, 90-140, 90-147, 90-236, 91-34). For example, the International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers, and Helpers, AFL-CIO stated:

The International Brotherhood strongly believes that regulated areas and limits on employee access into contaminated areas are appropriate and feasible methods to preventing unnecessary employee exposure to asbestos. Regulated areas make it possible to restrict the number of persons potentially exposed to asbestos and to prevent contamination of larger areas of the job site. We believe that with regulated areas, employees in an asbestos environment can be provided with proper protective

equipment, clothing, and ventilation while permitting other employees working in the non-regulated area to perform their work without risks of asbestos exposure [Ex. 91-34].

Other OSHA standards that regulate exposure to toxic substances contain such a provision, for example, vinyl chloride, 29 CFR 1910.1017; arsenic, 29 CFR 1910.1018; acrylonitrile, 29 CFR 1910.1045; ethylene oxide, 29 CFR 1910.1047. Additional purposes of regulated areas are to designate those locations in which precautionary signs are posted, to designate those employees subject to exposure monitoring and to define those areas where employees must wear respiratory protection and protective clothing. Additionally, when working in regulated areas certain activities are prohibited, such as smoking, eating, and drinking. This limitation is in accordance with good industrial hygiene practice which recognizes the potential of toxic chemicals to add to the body burden through ingestion. Furthermore as previously discussed in the health effects section of this document, smoking increases the risk of lung cancer.

Some participants, such as W.R. Grace and Company [Ex. 90-167], supported limiting regulated areas or expressed concern about establishing regulated areas where exposures do not consistently exceed the PEL. Bell Communications Research [Ex. 90-173] felt that short term tasks, lasting less than a single day or work shift, did not adapt themselves to the concept of regulated areas. A third commenter [Ex. 90-183] was of the opinion that regulated areas should not be required and that regulating employee exposures to asbestos "should be accomplished through the establishment of an appropriate exposure limit and any feasible combination of engineering controls, work practices and personal protective equipment".

For all the reasons stated above, after considering the record and based on OSHA's experience enforcing those standards which require regulated areas, OSHA believes that establishing regulated areas is necessary and appropriate to limit employee exposure to asbestos, regardless of the length of employee exposure.

The final standard gives employers a choice of whether to use, for example, ropes, markings, temporary barricades, gates, or more permanent enclosures to demarcate and limit access to these areas. Factors that employers might consider in determining the type of identification system include the