

at the action level of 0.1 f/cc rather than the proposed 0.2 f/cc. Considerable evidence was submitted to the record demonstrating that training and information programs are essential in assuring worker protection to asbestos exposure [Exs. 158-I, 294, 296, 84-374, 90-174, 90-177, 93-6, Tr. 7/9, p. 189]. A number of participants supported training at the action level [Exs. 86-4, 123-A, 172-A, 328]. Furthermore, both the Asbestos Information Association of North America and the International Union, UAW, strongly recommended that a 0.1 f/cc action level would be an appropriate level.

A few commenters [Exs. 122; Tr. 6/22, p. 52] advocated that the training and information program be triggered at any airborne level and not be contingent upon the action level being reached or exceeded. These commenters expressed the view that all asbestos workers, not just those at highest risk, be informed of the health hazards of asbestos, the relationship between asbestos and smoking, and ways to minimize exposure.

Although the concerns expressed by these commenters are valid, OSHA takes the view that formal training is not required for employees whose exposures are below the action level. This is partly due to the lower risk involved, and also to the fact that asbestos is present in some shape or form in so many workplaces that it would be impractical to provide formal training to everyone who might at some time encounter it, for example, office workers. The spectrum of possible exposure would range downward from the action level to zero, and some clear cut-off is needed to identify those employees who stand to benefit the most from formal training.

In sum, the record evidence with regard to information and training, reinforces the importance of informed employees to the successful implementation of an occupational health program, and provides strong support for the inclusion of these requirements in the final rule.

In its posthearing brief (Ex. 328), the AIA/NA urged OSHA to eliminate smoking in the workplace when asbestos is present. Citing evidence in the record and testimony by experts as to the synergistic effects of smoking and exposure to asbestos, the AIA/NA made several specific recommendations.

Specifically the AIA/NA recommend[s] that OSHA prescribe the following requirements applicable to any work station or job classification that is likely to involve asbestos exposures above 0.1 f/cc for more than 30 days per year:

- (1) All new workers hired should be non-smokers;
- (2) All smoking during work hours should be banned;
- (3) All sale of tobacco products on plant premises should be banned; and
- (4) All employers should make smoking cessation programs available to their employees [Ex. 328].

The final standard addresses some of these concerns. Employees are prohibited from smoking under certain conditions. For example, employees who work in the regulated area are prohibited from smoking in that area. The training requirements of the standard mandate that the employee be informed of the nature of the hazard and the relationship between asbestos and smoking and lung cancer. We expect that such information will encourage workers to stop smoking. However, the Agency has made a determination, based on policy considerations, not to ban the hiring of smokers or require employers to have smoking cessation programs. The employer is free to follow recommendations such as those by the AIA/NA outlined above. However, the employer is not required by OSHA to institute such programs.

11. Paragraph (k). Housekeeping.

The final standard imposes the general housekeeping requirement to maintain all surfaces free, as is practicable, of accumulations of asbestos containing dust and waste. The standard bans the use of compressed air for cleaning and allows dry cleaning only if the employer shows that wet methods and vacuuming are not feasible. It also requires that vacuuming be done with cleaners equipped with HEPA filters [Exs. 240A, 264, 92-038, 312A] to prevent the dispersal of asbestos into the workplace. These are exceptionally important provisions because they minimize additional sources of exposure that engineering controls generally are not designed to control.

The existing provision requires that surfaces be maintained "free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration." A number of commenters has suggested and OSHA agrees that the language "an excessive concentration" is ambiguous. Thus, OSHA has removed the phrase from the final standard. OSHA believes that it may be difficult to objectively determine when the condition in the standard would occur. OSHA also believes that a rigorous housekeeping program is absolutely necessary to keep airborne asbestos levels below permissible limits.

This belief was supported by a number of submissions to the

rulemaking record including, industry, labor and government organizations [Exs. 84-27, 84-346, 90-236, 91-27, 123A, 129, 274, 312A, and 328]. For example, several industrial hygiene manuals submitted to the record stressed the importance of a conscientious housekeeping program:

Good housekeeping plays a key role in the control of occupational health hazards. Dust on overhead ledges and on the floor should be removed before it can become airborne by traffic vibration and random air currents. Good housekeeping is always important, but where there are toxic materials, it is of paramount importance. . . . It is impossible to have an effective health hazard control program unless maintenance housekeeping (policing) is good and the worker has been informed of the need for those cleaning measures [Ex. 91-27.22, p. 630].

In particular for asbestos, a number of comments addressed the issue of housekeeping and the methods adopted by OSHA in the final standard.

Housekeeping is an important factor in safety to a worker. The cleaner the work area, the less chance there will be of airborne asbestos escaping a jobsite. Once again, it is important to keep asbestos fibers wet and to damp mop or wipe off all surfaces. Regardless of the job, a final cleaning is required [Ex. 274, p. 4].

And,

Good housekeeping is essential to reducing levels of airborne asbestos. Waste materials such as rejects, scrap, shavings, or other debris should be picked up and placed in plastic bags. At the end of a shift, these bags should be taped shut, labeled as to the hazard contained therein, and disposed of.

Asbestos dust on floors, ledges, equipment, overheads, and other plant surfaces can become airborne when disturbed by drafts or work activity, and it should be removed. Sweeping is not the way to remove it, however, because the fine fibers are entrained into the air and deposited on remote ledges, pipes, and other inaccessible surfaces [Ex. 84-27, p. 78].

Housekeeping was also addressed in the control of asbestos exposure in shipyards:

a. Periodic cleaning of work area, especially at the end of each shift, contributes greatly to dust reduction. The longer materials lie the more widespread they become, producing considerable airborne dust.

b. Foot traffic produces considerable dust from fallen asbestos scrap, shavings, or debris. The simple procedure of placing cutting or work stations away from general foot traffic significantly reduces dust [Ex. 92-47.6, p. 8].

The AFL-CIO summarized the support for specific housekeeping requirements in its post-hearing brief: