

working with asbestos (Exs. 169-A, 216, 328, 330, 335, Tr. 6/19, Tr. 6/21, Tr. 6/27, Tr. 6/29).

Joe Adam of the United Association of Journeymen and Apprentices stated that:

Construction worker exposure is not restricted to only those employees working directly with asbestos products Operations such as spraying, cutting, upbrading, stripping, removal and demolition of asbestos products can expose all workers on the job sites. . . . This possibility of incidental exposure . . . clearly shows the danger in trying to identify . . . workers at risk of asbestos exposure [using SIC codes]. Plumbers, pipefitters, carpenters, sheetmetal workers, painters, laborers, iron workers, boilermakers, and [workers from] all the other construction trade classifications, are at one time or another in their working life directly or incidentally exposed to asbestos products on the work site. (Tr. 6/27)

Mr. Adam stated that one of the reasons the BCTD had included a requirement for a regulated area in its recommended standard was: ". . . to separate those people who are designated as asbestos workers on an asbestos job from those others on the job who are working in other activities, and also to separate people who have the training and information on how to conduct themselves inside a regulated area" (Tr. 6/27).

Other commenters also expressed concern about other worker and bystander exposures to asbestos. Dr. William Nicholson, Associate Director of the Mount Sinai School of Medicine of the City University of New York, conducted a study in the 1960s of asbestos insulation installers and determined that "those working nearby [in the vicinity of the workplace received] from one-third to one-half the intensity of the exposure of the insulator workers" since asbestos was "being used in an uncontrolled situation" (Tr. 6/19). Deborah Nagin, Associate Director of the Program in Occupational Health of Montefiore Medical Center, who testified on behalf of the BCTD, cited a 1983 study (Am. Ind. Hyg. Assoc. J. 44(6):428-432) on worker exposure to asbestos during the removal of sprayed-on asbestos-containing material and renovation activities in buildings containing sprayed-on material that showed that, on the average, bystander sheet metal workers working in such environments had the highest exposure, followed by bystander carpenters and electricians (Ex. 169-A). All bystander workers, except painters, according to Nagin, were consistently exposed to asbestos fiber concentration exceeding the action-level of 0.1 fiber/cc over an 8-hour period, even though they

themselves were not working directly with asbestos. (Ex. 169-A).

OSHA recognizes that several different operations involving workers from numerous trades may simultaneously take place on the same construction site and that the exposures of these workers to asbestos should be minimized to the extent possible. OSHA believes that requiring employers who are directly involved in asbestos-related activities to inform other employers working nearby on a multi-employer worksite of the existence of hazardous levels of asbestos, regulated areas, and the rules pertaining to such areas will contribute substantially to the protection of these bystander employees.

Paragraph (e)—Regulated Areas

The existing asbestos standard requires that signs be posted to alert employees to the existence of areas where the PEL is exceeded. In the April notice (49 FR 14116-14145), OSHA solicited comments on the need to include a provision in the revised standard requiring the designation of regulated areas, what the appropriate trigger for the establishment of such areas should be, and what activities should be required or prohibited in a regulated area (49 FR 14124). OSHA received several comments in response to these questions, and these are discussed below, in connection with the revised standard's requirements for regulated areas.

Paragraph (e) of the revised construction standard contains provisions requiring employers to establish regulated areas when certain types of construction work are performed or when the PEL is exceeded. Regulated areas required by the standard may take two forms: for asbestos work operations that do not involve asbestos removal, demolition, or renovation, such an area may consist simply of an area demarcated by posted signs that limit the number of employees entering the area. The regulated area requirement in paragraph (e)(6) of the revised construction standard requires employers who perform asbestos removal, demolition, or renovation operations to establish regulated areas that consist of negative-pressure enclosures that will confine the asbestos fibers being generated to the area within the enclosure and will thus protect other employees and bystanders on the site from exposure to excessive levels of asbestos. The requirements associated with each type of regulated area are discussed separately below.

Paragraphs (e)(1) through (e)(5) address regulated area requirements for

projects other than asbestos removal, demolition, and renovation operations. For example, employers might establish a regulated area of the type described in paragraph (e)(1) during operations such as the cutting or lathing of asbestos sheet or pipe or the removal of asbestos-containing floor tile. Paragraphs (e)(2) and (e)(3) require that the regulated area be demarcated in a manner that restricts entry to the area to authorized persons only. Respirators must be supplied to persons entering regulated areas as specified in paragraph (e)(4), and eating, drinking, smoking, and applying cosmetics are prohibited in such areas by paragraph (e)(5). These requirements are consistent with similar provisions in previous OSHA standards (Acrylonitrile, 29 CFR 1910.1045; Inorganic Arsenic, 29 CFR 1910.1018; Ethylene Oxide, 29 CFR 1910.1047; and Vinyl Chloride, 29 CFR 1910.1047) and with the revised asbestos standard for general industry.

In addition to the provisions mentioned above, paragraph (e)(6) of the revised rule contains requirements related to the establishment of negative-pressure enclosures to be used in asbestos removal, demolition, and renovation operations. The purpose of this negative-pressure enclosure is to restrict the spread of asbestos dust that may be generated when large amounts of asbestos-containing material are handled during asbestos removal, renovation, and demolition operations. OSHA believes that such a requirement is necessary for construction sites where asbestos projects of these types are performed because such sites are likely to involve several employers (e.g., electricians, plumbers, etc.) and many workers who are not directly involved in the asbestos-related operations. The negative-pressure enclosure required by paragraph (e)(6) will prevent the exposure of these workers to concentrations of asbestos fibers that exceed the action level. OSHA has included an informational appendix, (Appendix F) in the revised rule that provides detailed information on the use of negative-pressure enclosures during asbestos removal, demolition, and renovation operations.

Paragraph (e)(6)(ii) of the revised standard also requires employers to designate a competent person to: ensure the integrity of the enclosure; control entry to and exit from the enclosure; supervise employee exposure monitoring; and ensure that employees working within the enclosure wear the required personal protective clothing and respirators, use the appropriate hygiene facilities, and observe the