

worker in mind. The factories presented the critical industrial health problems of the 19th and early 20th centuries and this is where the interest, the research, and the money has been invested. The emphasis today, although comparatively small, is still on the factory. As a result, the standard control methods available in all the textbooks, ventilation, isolation, enclosure, substitution, and personal protection, are organized to make practical and economical sense in a factory setting.

The factory hand works for the most part in a fixed location. Exposure is repetitive and predictable over a long period of time. Utilities are available and control methods can be designed, tested, and finally built-in as part of the company's long-term capital investment. It is not unusual to see a \$20,000 ventilation system built into a plant to protect 10 or 15 welders.

But look at the welders on the construction job. In a lifetime, each will have done about as much work and generated as many fumes as a factory welder. However, the control system here is non-existent, because the control methods in the textbooks do not make practical or economic sense on a construction job.

Factory spray painting is done in a ventilated booth, according to the books. Since a booth would cost too much on a construction job, we scratch our heads and spray paint anyway.

Dust, noise, heat, and almost any health problem is controlled by cookbook methods in the factory. The cook book doesn't work for construction, so we live with the problems and hope they will go away.

It is now critically necessary that we accept the fact that a construction job is not the same as a factory job, and that the factory hazard-control cookbook—although free—is not applicable.

A third conclusion—we must begin to develop our own occupational health standards.

The golden era of occupational health in the United States ended in the mid-1950's. The movement which began in the 1930's and provided wide knowledge of industrial diseases and excellent textbooks is slowly dying. The Federal program is small and without legal authority. State programs not only have been declining in manpower, but show little interest in the construction industry. The traditional standard-setting agency

for occupational health in the country, the American Conference of Governmental Industrial Hygienists, is dependent upon its dues-paying members for support. Its \$13,000 yearly total budget will not cover more than a fraction of the country's problems, and that fraction will be factory-oriented.

On this basis, it is unlikely that the widely subsidized work that went into helping the industrialist to understand his problems and to custom-tailor his environmental control will be available to the construction industry. The facts are that the responsibility for providing a reasonably healthy place to work lies directly with construction labor, and construction management.

The need for environmental standards is growing with each day. Noise offers a fine example: Heavy equipment, trucks, compressors, chain saws, jackhammers, and a wide variety of power hand tools are producing hearing loss that is reaching scandalous proportions. There are choices. The individual contractor can hire an acoustics expert and modify these tools at his own expense. As another choice, he can attempt to stuff ear-plugs in his men, a method that will be of no practical value on a construction job, and one that will probably reduce productivity. A popular alternative is to do nothing and let the insurance companies worry about it.

The sensible solution is to collectively write a set of performance standards for power equipment. These can be written right now, from knowledge at hand, and would specify maximum allowable noise intensities at an appropriate given distance from the equipment. The tool manufacturers may have difficulties at first. But their engineering and research departments are available and in the best position to control hearing loss at the lowest possible cost.

Adequate labelling also must be considered. Very few of the materials capable of causing eye, skin, or lung problems such as plastics, paints, welding rods, fluxes, solvents, lubricants, etc., have useful warning labels when they reach the construction site. This has two negative effects, in addition to the potential for injury. First, even the interested men cannot find out how to protect themselves. And second, if the material does cause a problem, the men have no clear information that might be useful in selecting a less harmful product for the next job.