

HOW TO CONTROL ENVIRONMENTAL HEALTH HAZARDS

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We have learned what the potentially harmful materials and energies in industry are; we've seen how they come to be released in the plant environment; we've heard how their harmfulness is gaged or measured. Now we must figure out how to control them—to make the workplace safe. Even more, how to make those people in the workplace as free from discomfort, annoyance, and fatigue as practicable.

Some years ago, an industrial hygienist put it this way: "To have discovered critical hazardous areas, and to have measured the degree of damaging exposure is excellent; but then to do nothing more, is foolhardy."

In general, any unhealthful in-plant environment can be made healthful by following the sound principles of industrial hygiene or environmental health engineering. These principles are not new. Some 40 years ago, a handful of practical minded researchers under the guidance of Professor Drinker at Harvard demonstrated that dusts, fumes, mists, gases, and vapors could successfully be controlled or brought to safe levels. Proof of this was early established through pioneer studies of the U. S. Bureau of Mines, U. S. Public Health Service, Saranac Laboratory (New York), and by many others through succeeding years who convincingly showed that in such controlled environments occupational disease no longer developed.

Attack on workroom conditions that might endanger a man's health is straightforward and logical: you rid the plant of the danger by substituting materials or operations that are inherently safe, or you trap the bad-acting agent so it doesn't get out into the work area, or you dilute its effects (through time or distance or otherwise lowering its concentration where the workman is), or you give the workman his own safe personal environment through use of personal protective devices.

These fundamentals have been preached for two generations. They are tested and proven. In theory they apply to control of

exposures to dusts, fumes and gases; even to control of such things as heat, noise and vibration. Of course, through the years, advancing industrial hygiene know-how has led to many refinements and improvements.

We need not go into details of design, which would not be the responsibility of a safety engineer. However, if he has an overall understanding of what the appropriate control methods are, he can often save his management money. Through diplomatic suggestion he can guide—often with real reward—his engineering department, his plant maintenance man, machine designer, process engineer, and the people themselves toward the achievement of a safe and healthful workplace, at a minimum of cost.

Since details are out of place here, it is comforting—and may sometime be a face-saver, if not a lifesaver—to know where to lay your hands on engineering reference data. Some good sources are:

The National Safety Council's *Accident Prevention Manual*¹ (a new and revised 6th edition will soon be forthcoming). Six chapters (chapter 28, and chapters 39 through 43) are loaded with industrial hygiene know-how.

National Safety *Data Sheets*, which now number in the hundreds, have scores of solutions to industrial hygiene problems.

National Safety News carries frequent articles on current developments in industrial hygiene and occupational disease control.

The American Industrial Hygiene Association² has several publications that may be of value to a safety engineer confronted by specific new problems. Among these are:

AIHA *Industrial Noise Manual*.

AIHA *Air Pollution Manual*.

AIHA *Hygienic Guides*—a series of 2- to 4-page leaflets, each devoted to the effects, measurement and control of some 100 chemicals used in industry such as, sand (free silica), asbestos, carbon monoxide, carbon tetrachloride, sulfur dioxide, etc.