



# THE IMPORTANCE OF INDUSTRIAL HYGIENE SYSTEMS IN ORGANIZATIONS





# The Importance of Industrial Hygiene Systems in Organizations

*by Langdon Dement*

Health and safety professionals all over the world face the challenge of ensuring that workers are as healthy and safe as possible during their work shifts. Maintaining proper training for the employees, supplying proper personal protective equipment (when necessary), and minimizing workplace hazards all help in creating a safer work environment. However, we most often focus on reducing injuries but overlook the importance of protecting workers from occupational illness. And many of these illnesses can result in anything from minor health effects to ultimately, death.

Every day, some workers bring home something extra with them—their workplace exposure to potential health hazards. Many workplace hazards—like chemical spills and motorized vehicle accidents—are easily recognized while some are not even acknowledged. It's these seemingly, non-serious hazards that have the potential to cause long-lasting adverse health effects. For example, many serious occupational diseases have a long latency period between exposure and advancement, meaning it could take a number of years for a life-threatening disease to become established.

According to the Bureau of Labor Statistics (BLS), approximately 189,400 occupational diseases were recognized or diagnosed by employers in the United States in 2014. Diving deeper into that number, we find approximately 28,600 new cases of skin disease or disorders, 20,900 hearing loss cases, 17,700 respiratory conditions and 2,400 poisonings with all other occupational illnesses are accounting for approximately 119,900 cases. And how many more occupational diseases already exist or are not reported yet because of exposures that occurred one, two, five, or even 10 years ago?

Occupational diseases are a global epidemic. As of 2010, the International Labour Organization (ILO) estimates that every year, 2 million people worldwide die from work-related diseases. Additionally, the ILO estimates that 160 million cases of non-fatal work-related diseases occur annually. Although in the United States rates of occupational illnesses are improving, emerging technologies can create serious health hazards. Understanding new technologies and the hazards associated with them will enable workers to be better prepared and determine how to eliminate, or at least mitigate, those hazards.





Occupational diseases also inflict massive costs in life and livelihood. Silicosis for example, has resulted in approximately 74 million deaths in the United States between 1968 and 2002. Even today, the Occupational Safety and Health Administration (OSHA) estimates 2.3 million workers are exposed to respirable crystalline silica in occupations such as manufacturing, mining, construction, and agriculture. The financial aspect of occupational diseases is tremendous as well.

According to the ILO, asbestosis exposure in the United States costs insurance companies a reportedly \$21.6 billion during the period between 1990 and 2000. In addition, J. Paul Leigh conducted a study in 2007 which estimated the economic burden of occupational injury and illness in the United States to be around \$250 billion a year. The number of fatal and nonfatal illnesses in 2007 was estimated to cost \$46 billion and \$12 billion. With numbers this onerous, why not increase the focus and strive to reduce these diseases?

This is where a proper industrial hygiene (IH) program comes into play. By being able to better anticipate, recognize, evaluate, prevent, and control hazards around the workplace, an employer can enhance its ability to reduce occupational diseases. The history of IH itself is filled with the story of occupational diseases, and methods of how to reduce those diseases.

Occupational diseases have no respect for individuals; they are equal opportunity afflictions. They can permanently affect a person's health after an acute exposure or a low-dose chronic exposure.

Their effects can range from minor illnesses to death, and everything in between.

So where should you go from here?

Initially, it's important to be aware of the hazards present in the workplace before you start any work. This should include knowing when potential hazards are present, where they are located, and the condition they are in. Conduct a risk assessment of the building or task being performed to uncover who will potentially be at risk and establish the level of exposure that will be present. Whenever possible, employers should implement engineering controls to minimize hazards. Finally, confirm that all workers are educated and trained on potential hazards and proper personal protective equipment (PPE) use. Be sure to keep records of possible exposures and offer medical evaluations and counseling to affected workers. Workers should be vigilant and maintain some fundamental steps such as maintaining proper personal hygiene, wearing protective clothing, and utilizing proper respiratory protection.

Maintaining records is also essential for industrial hygiene. Think about this scenario: "After 15 years of work, an employee has developed silicosis. During their time of employment, how often have they been exposed to silica? Has it been regular exposure or intermittent? Have controls been in place the whole time?" Questions like these can be answered by a simple, yet effective record-keeping system. In addition, it's beneficial to be able to recall previous assessments that have been conducted throughout the facility. Having the

ability to look at the historical records of IH sampling for a specific job task or area aids the organization in:

- Following certain regulations where required,
- Assessing whether the job tasks/area has improved or declined in hazards present,
- Increasing program effectiveness, and
- Mitigating legal threats that may arise.

Additionally, industrial hygiene management systems have the ability to assist organizations in ways such as:

- Simplifying tracking and record-keeping,
- Managing qualitative and quantitative exposures,
- Managing IH equipment with calibration data, and
- Integrating EHS processes with other departments.

Hazards are present in all organizations, so understanding best practices to minimize hazards and reduce them to acceptable levels is crucial for every workplace. Having and utilizing a proper IH management system will set your organization apart and will empower you to keep your employees safe. Ultimately, as Health and Safety professionals, we should have one foremost goal: to keep workers, their families, and the community healthy and safe.

### AUTHOR

EHS Langdon Dement, EHS Advisor with UL EHS Sustainability, specializes in industrial hygiene, ergonomics, patient handling, and Job Hazard Analysis. He is a Certified Safety Professional (CSP), Associate Ergonomics Professional (AEP), and an OSHA Authorized Outreach Trainer for general industry. He earned a B.S. degree in Biology from Harding University as well as an M.S. degree in Occupational Safety and Health from Murray State University.