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Weekly Safety Tip

Life Is All About Choices!®

March 9, 2015

SCI Safety Tip: What You Think You Know About Industrial Fire Really Can Hurt You (Part 2)

Source: <https://www.hsb.com>

By: Dominique Dieken, P.E., CFPS

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Myth #2 - Don't Use Water On Flammable Liquid/Oil Fires

When I recommend sprinkler protection for a flammable liquid or oil hazard, someone is bound to argue that water should not be used on a flammable liquid fire. And while it is true that a straight stream of water applied to a pool fire can actually spread burning liquid, this is a poor reason to completely exclude the use of water. Water is an excellent fire suppression agent used to successfully control and extinguish flammable liquid fires if properly applied. A brief look at the physics of burning liquids will help explain why. Every flammable/combustible liquid has a flash point — the temperature at which the liquid gives off a flammable vapor in sufficient concentration with ambient air to generate an ignitable mixture. It is not actually the liquid which burns but the vapor. The proper application of water to a flammable liquid fire has several effects:

It absorbs convective heat above the fire that can cause structural damage and ignite other nearby combustibles.

SCI Safety Slogan

Be alert! Accidents hurt.

James Lehrke-SCI

When applied to structural members, it provides a cooling effect to keep the materials from failing. Structural steel begins to weaken at 800 degrees F. It extracts heat from the liquid itself. When the liquid is cooled to below its flash point the fire will self-extinguish.

Water Application and Spill Containment

The method of water application is the key. Trained fire fighters use a spray or fog pattern from their hoses in order to accomplish the three objectives listed above. In fixed fire suppression systems the same purpose is achieved with sprinklers and water spray systems.

Another important aspect of flammable liquid fire control is proper spill containment. If a pool or “burning” liquid flows outside of a sprinkler-protected area, no sprinkler system will do the job. Containment areas should be limited to the areas protected by the fire suppression system and for ease of control should be subdivided into smaller areas. Only highly hazardous applications such as aircraft hangars, refineries and flammable liquid warehouses use foam-water sprinkler systems or three-dimensional expansion foam systems.

Myth #3 - Sprinklers Do More Damage Than Fire

The sight of a commercial or industrial building burned to the ground dispels this notion. On the contrary, sprinkler systems can provide early control of a fire, which helps to improve safety and limit the damage. Insurance companies have known for a long time that the dollar amount of damage is much higher in buildings that don’t have sprinklers.

It helps to understand how sprinkler systems function. With the exception of the deluge sprinkler/water spray system, which is only used for specific high hazard applications, sprinkler heads only operate when heat released by fire melts the fusible link that keeps the sprinkler closed. The open sprinklers can be expected directly above the fire seat. Every individual head must be triggered in that fashion.

Sprinklers Can Reduce Fire Losses

The required water flow alarm notifies fire department and plant personnel so that sprinklers can be secured after the fire department has established the fire is out. In the majority of cases where sprinklers actuate during fires, the fire damage can be expected to be small, and water damage would be confined to approximately 400 square feet. Often, total damages due to sprinkler discharge are less than \$5,000 and go unreported. In contrast, fires can easily result in multimillion-dollar losses where sprinklers are absent.

According to a U.S. government fire loss history study through 1991, the average loss in computer rooms without a fire suppression system was about \$38,000. By comparison, the average loss due to fires controlled by sprinklers was about \$3,000. Fires extinguished by halon systems had an average loss of about \$6,000, including the replacement cost of the halon.

Continued next week

SCI OSHA Compliance: OSHA cites huge cost of workplace injuries. The solution? Prevent them.

Source: <http://www.blr.com>

Date: March 6, 2015

Every year, more than 3 million workers are seriously injured, and thousands more are killed on the job. In a new report, OSHA details the enormous financial and social cost of these injuries, which are largely borne by workers, their families, and taxpayers. Keep reading to learn more.

In the report, *Adding Inequality to Injury: The Costs of Failing to Protect Workers on the Job*, OSHA says a worker who is seriously injured will earn 15 percent less over a 10-year period and will bear 50 percent of the costs associated with that injury.

OSHA administrator David Michaels, PhD, notes, “These injuries and illnesses add to the pressing issue of income inequality because they force working families out of the middle class and into poverty, and keep the families of lower-wage workers from ever getting out.”





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Quick Tips for Healthy Living**Eating Right Isn't Complicated**

Eating right doesn't have to be complicated — simply begin to incorporate a healthy eating plan into your daily routine. These recommendations from the Dietary Guidelines for Americans can help get you started.

- Emphasize fruit, vegetables, whole grains and low-fat or fat-free milk and milk products.
- Include lean meats, poultry, fish, beans, eggs and nuts.
- Make sure your diet is low in saturated fats, *trans* fats, cholesterol, salt (sodium) and added sugars.

Make Your Calories Count

Think nutrient-rich rather than "good" or "bad" foods. The majority of your food choices should be packed with vitamins, minerals, fiber and other nutrients, and lower in calories. Making smart food choices can help you stay healthy, manage your weight and be physically active.

Focus on Variety

Eat a variety of foods from all the food groups to get the nutrients your body needs. Fruits and vegetables can be fresh, frozen or canned. Eat more dark green vegetables such as leafy greens and broccoli and orange vegetables including carrots and sweet potatoes. Vary your protein choices with more fish, beans and peas. Eat at least three ounces of whole-grain cereals, breads, crackers, rice or pasta every day.

Know Your Fats

Look for foods low in saturated fats, *trans* fats and cholesterol to help reduce your risk of heart disease. Most of the fats you eat should be monounsaturated and polyunsaturated fats. Check the **Nutrition Facts panel** on food labels for total fat and saturated fat.

In theory, workers' compensation covers lost wages, medical expenses, rehabilitation, and other injury costs. But the coverage is actually quite limited. OSHA says that workers' compensation payments typically cover only about 21 percent of lost wages and medical costs associated with injuries and illnesses. The rest must be paid by workers, private health insurance, and taxpayers through programs like disability subsidies. Moreover, studies show that only about 40 percent of eligible workers apply for workers' compensation benefits at all.

Another issue is the increased employment of temporary workers, which OSHA says increases the risk of injuries. Injured temporary workers tend to lose more days from work than other workers while receiving less medical and time loss reimbursement. As well, temps are often more hesitant to report their injuries and claim compensation out of concern that a staffing agency will not assign them additional work.

Prevention is the solution to the problem of injury cost

OSHA concludes that the cost-effective solution to the economic burden of workplace injuries is preventing them. A reduction in incidents would also have a significant impact on healthcare system costs, reducing expenditures for hospitalizations and other care. Although the number of injuries, illnesses, and fatalities has declined dramatically since 1970, the year OSHA was formed, the report suggests that much more must be done. Employers must reduce risk, and states should eliminate roadblocks that prevent workers with compensable injuries or illnesses from receiving full benefits.



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In Loving Memory of Jessica Lehrke

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