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## *Weekly Safety Tip*

*Life Is All About Choices!®*

July 11, 2016

### SCI Safety Tip: Can you judge the danger by counting the seconds? Addressing lightning hazards

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

Date: June 27, 2016



According to the National Oceanic and Atmospheric Association (NOAA), about 25 million cloud-to-ground lightning strikes occur each year in the United States. More than 400 people are struck by lightning every year; about 70 die, while others are left with permanent neurological damage.

Lightning victims include campers and hikers; sports team participants and coaches; and outdoor workers, like the four workers who were seriously injured in a lightning strike in Arkansas in 2014.

#### **A flash of lightning**

Three different employers had workers at a natural gas well just outside Quitman, Arkansas, on April 24, 2014. Although the morning was overcast, the nine workers saw no reason for concern. After lunch, it began to rain intermittently, but the workers continued working until they heard thunder. They took shelter in a work trailer at the site but stayed only about 15 minutes before deciding that the rain had let up enough for them to resume work. About 15 minutes after the workers left the trailer, lightning struck the well. Four workers were injured.

### ***SCI Safety Slogan***



***James Lehrke-SCI***

Federal OSHA cited one of the employers, Key Energy Services, for failing to protect workers from the recognized hazard of a lightning strike. Key argued that it had done what it could to protect workers, training them to recognize and respond to dangerous weather conditions. The workers, Key pointed out, had in fact taken shelter as required by its emergency plan when the weather became threatening.

OSHA disagreed, arguing that Key should have provided workers with lightning detectors and required them to use mobile weather apps and weather radios to better track weather conditions.

Ultimately, the citation was vacated because OSHA was unable to demonstrate that its recommended means of abatement were any more effective than what the employer had done.

But the question remains: What do you do when the weather turns threatening? Is lightning really a significant risk? What's your best bet for protecting outdoor workers from lightning?

#### **Practice Tip**

Commercial lightning detectors are available, but they're expensive, and don't seem significantly more effective than simply watching the weather and responding quickly to thunder.

#### **Lightning without rain**

All thunderstorms produce lightning, according to OSHA and the National Weather Service (NWS), and lightning frequently strikes as far as 10 miles from any rainfall. Under certain conditions, lightning can strike more than 25 miles away from the thunderstorm cloud that generates it, in an area where the thunderstorm isn't even visible.

In desert regions like those of the western United States, including California, workers might become complacent about lightning. But "dry lightning" is a common phenomenon here that causes many wildfires.

Dry lightning occurs when the rain from a thundercloud evaporates before it reaches the ground, so, at ground level, things remain dry. The lightning travels all the way to the bone-dry ground, though, where it sparks a fire that isn't immediately extinguished by accompanying rain. Workers, too, may be at risk from dry lightning strikes.

#### **Protecting outdoor workers**

Unfortunately, even though lightning kills more Americans every year than tornadoes or hurricanes, we can't predict lightning strikes very well. But you can still take steps to protect workers.

Here's the best practices consensus, drawn from federal OSHA, the NWS, and the Centers for Disease Control and Prevention:

- *When thunder roars, go indoors.* The single most important piece of advice offered by both OSHA and the NWS is that workers should seek cover if they hear thunder. Many workers may know that if they count the seconds between when they observed the lightning and when they heard the thunder, and divide by five, they can tell how many miles away the storm is. Fewer know that they can only hear thunder for a distance of about 5 miles. If the storm is close enough for workers to hear thunder, it's close enough for them to be at risk of lightning strikes.
- *Plan ahead.* Use a portable weather radio, smartphone, Internet connection, radio, or television to check the weather forecast when you will be working outside and to keep up with changing conditions when the weather is threatening. In California, be aware of "Fire Weather Watch" and "Red Flag Warnings" issued by the NWS—dry lightning is one of the risks in those conditions.
- *Seek substantial shelter.* The best shelter is a fully enclosed building with electrical wiring and plumbing. Structures that provide cover from rain don't necessarily provide protection from lightning; avoid tents, sheds, small or open shelters, dugouts, bleachers, and grandstands. In the absence of a fully enclosed building, the next best option is a hard-topped metal vehicle with the windows closed.
- *Stay put for at least 30 minutes after the last clap of thunder.* Because lightning can strike so far from the heart of a storm, both OSHA and the NWS recommend that workers remain in shelter for 30 minutes after the last thunder is heard.

## SCI OSHA Tips: Fall Protection

Source: <https://www.osha.gov/SLTC/fallprotection/index.html>

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OSHA has developed this webpage to provide workers and employers useful, up-to-date information on fall protection.

Why is fall protection important?

Falls are among the most common causes of serious work related injuries and deaths. Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated workstations or into holes in the floor and walls.

What can be done to reduce falls?

Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls. OSHA requires that fall protection be provided at elevations of four feet in general industry workplaces, five feet in



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**It is always better to prevent a disease than to treat it after it occurs.**

According to the CDC, diseases that used to be common in this country and around the world, including polio, measles, diphtheria, pertussis (whooping cough), rubella (German measles), mumps, tetanus, rotavirus and *Haemophilus influenzae* type b (Hib) can now be prevented by vaccination. Thanks to a vaccine, one of the most terrible diseases in history – smallpox – no longer exists outside the laboratory. Over the years vaccines have prevented countless cases of disease and saved millions of lives.

**Immunity protects us From Disease**

Immunity is the body’s way of preventing disease. Children are born with an immune system composed of cells, glands, organs, and fluids located throughout the body. The immune system recognizes germs that enter the body as "foreign invaders" (called *antigens*) and produces proteins called *antibodies* to fight them.

The first time a child is infected with a specific antigen (say measles virus), the immune system produces antibodies designed to fight it. This takes time . . . usually the immune system can’t work fast enough to prevent the antigen from causing disease, so the child still gets sick. However, the immune system “remembers” that antigen. If it ever enters the body again, even after many years, the immune system can produce antibodies fast enough to keep it from causing disease a second time. This protection is called immunity.

It would be nice if there were a way to give children immunity to a disease without their having to get sick first.

**In fact there is:**

**Vaccines** contain the same antigens (or parts of antigens) that cause diseases. For example, measles vaccine contains measles virus. But the antigens in vaccines are either killed, or weakened to the point that they don’t cause disease. However, they *are* strong enough to make the immune system produce antibodies that lead to immunity. In other words, *a vaccine is a safer substitute for a child’s first exposure to a disease.* The child gets protection without having to get sick. Through vaccination, children can develop immunity without suffering from the actual diseases that vaccines prevent.

shipyards, six feet in the construction industry and eight feet in longshoring operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance. To prevent employees from being injured from falls, employers must:

- Guard every floor hole into which a worker can accidentally walk (using a railing and toe-board or a floor hole cover).
- Provide a guard rail and toe-board around every elevated open sided platform, floor or runway.
- Regardless of height, if a worker can fall into or onto dangerous machines or equipment (such as a vat of acid or a conveyor belt) employers must provide guardrails and toe-boards to prevent workers from falling and getting injured.
- Other means of fall protection that may be required on certain jobs include safety harness and line, safety nets, stair railings and hand rails.

OSHA requires employers to:

- Provide working conditions that are free of known dangers.
- Keep floors in work areas in a clean and, so far as possible, a dry condition.
- Select and provide required personal protective equipment at no cost to workers.
- Train workers about job hazards in a language that they can understand.

Choosing Success

Chapter 6

Celebrate the win!

*“Celebrate what you've accomplished, but raise the bar a little higher each time you succeed.”*

-Mia Hamm-

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