



2019 Urban Fire Forum Position Statement:

Hot Work Safety Certification Training Program for Best Practices in Safety

Background

The NFPA Hot Work Safety Certificate Program was created to support an ordinance in Boston developed specifically in response to the line-of-duty deaths of two members of the Boston Fire Department. The cause of the deadly fire was careless/unpermitted hot work activity. As stated in the NFPA Hot Work Fact Sheet referenced below, in March of 2014, a fire in Boston, MA took the lives of fire fighter Michael Kennedy and Lieutenant Edward Walsh. The cause of fire was determined to be unpermitted welding where the workers did not take factors such as high winds and nearby combustible materials into account. The purpose of the NFPA Hot Work Safety Certificate Program is to help those in any industry develop awareness and understanding of dangers and safety procedures to promote safety on the work site where hot work occurs. It is a vital best practice in safety for anyone responsible for hot work activity or preventing damage and loss from hot work, but was built for and has mainly been utilized throughout the state of Massachusetts.

Hot Work Defined and the Scope of the Problem

According to a 2017 article in NFPA Journal, hot work is any work process that involves welding, soldering, brazing, cutting, grinding, drilling, burning, or melting of substances capable of creating a spark or flame of sufficient temperature to ignite flammable vapors and/or combustible material. In short, hot work is any activity performed that includes flame-production, spark-production, and heat production, either through conduction or radiation/convection. Common sources of ignition during hot work include open flames; electrical, friction, or impact sparks; hot surfaces; hot bearings; welding or cutting torches; and heated gases, coils, or resistors. All hot work involves inherent fire risks and hazards, and all fire hazards should be considered and evaluated before commencing hot work operations. Special procedures and permits are required when hot work is to be performed in a confined space, tank, vessel, or pipeline.

Hot work accidents occur throughout many industries in the United States, including food processing, pulp and paper manufacturing, oil production, fuel storage, and waste treatment. Most hot work incidents occur due to the ignition of combustible materials (e.g., a roofing fire) or the ignition of structures or debris near the hot work activity. Statistics from an NFPA Research Report states that five firefighter fatalities occurred between 2001 and 2015; 12 civilian deaths and 208 civilian injuries are caused per year from hot work fires and has resulted in \$287M in direct property damage to 4,440 structural fires. Although the 2017 NFPA Journal article reported that hazards associated with hot work are well documented, the frequency and severity of hot work-related incidents have been overwhelming in the last two decades. In order to fully benefit from the lessons learned from these incidents, it is important that industry and safety organizations adopt more stringent health and safety standards to ensure that hot work activity is conducted safely, that workers are aware of the hazards, and that they are fully protected.

Action to Date

NFPA 51B Standard for Fire Prevention During Welding, Cutting and Other Hot Work has existed since 1962. The standard establishes a framework built around the hot work safety team and permit documentation to ensure safety at all job sites where hot work is performed. In response to the tragic 2014 fire previously referenced, Boston Fire Department contacted NFPA and the two organizations collaborated to create The NFPA Hot Work Safety Certification Program, which launched in 2017. During this time, Boston Fire Department amended their fire code with an ordinance that required the certification training.

On July 1, 2018, the Massachusetts fire code was also amended to include the certification requirement, and NFPA has been working with other jurisdictions to help them address hot work concerns.

Since 2017, over 40,000 NFPA Hot Work Safety Certificates have been earned. Currently, hot work safety training is only required in the state of Massachusetts, however it is recognized as a best practice for the safety of hot work performed within any jurisdiction across all industries and segments. It has been expanding beyond Massachusetts not only because it helps demonstrate commitment to the highest safety standards but most importantly because the need for this training is being recognized from various industries and stakeholder types. One instance is the Heat and Frost Insulation Installers who don't typically perform hot work activity found it important enough for their installers to have awareness of hot work and how it relates to their work and other trades working in conjunction with their work on shared job sites that they recently requested an NFPA hot work safety presentation at their national annual meeting. Another example is the Plumbing Heating and Cooling Council requested to promote the NFPA program on their national website.

Training Overview

The course uses a three-step approach to hot work safety that outlines the most common hazards during hot work, addresses the hazards based on their severity, and provides strategies for managing the hazards either by eliminating them or reducing them to an acceptable level. Upon completion of the NFPA Hot Work Safety Certificate Program, a person should be able to:

- Identify relevant standards, regulations, and ordinances that are applicable to hot work
- Describe the three-step approach to hot work safety
- Define and identify hot work and hot work hazards
- Describe hot work evaluation requirements
- Describe hot work safety team roles and responsibilities
- Describe hot work permit requirements.

This is a unique training focus unmatched in quality or content, which is validated by NFPA earning the 2018 Gold Brandon Hall Excellence in Learning Award. Online training is provided in both English and Spanish languages.

Fire Service Role/Risk

Depending on the adopting jurisdiction, the fire services role may be enforcement and may at times include approving permit requests. Firefighters are most often the first to respond to a hot work accident and are therefore first in line to put their lives at risk. It is critical to reduce line-of-duty risk, protect civilian safety and property damage for controllable incidences. Local fire officials should enforce best practices in safety to reduce death, injury and property damage due to hot work.

Action

The Metropolitan Fire Chiefs Association/Urban Fire Forum Chiefs endorse hot work safety training and encourage state and local fire and building officials to adopt and enforce a training and certification program to prevent future incidents.

Definitions

Hot work - any activity performed that includes flame-production, spark-production, and heat production, either through conduction or radiation/convection

Resources

[NFPA Hot Work Fact Sheet](#)

[2017 NFPA Journal article "Hot Work, Safe Work"](#)

[NFPA Research Report Structure Fires Started by Hot Work](#)

NFPA.org/51B

Appendix

Please see the [NFPA Hot Work Certificate Verification Database](#), a tool that allows verification that a person performing hot work or requesting a permit has successfully completed the Hot Work Safety Certificate Program.