

# Hot Work Operations

## Introduction

Hot work operations involve the use of portable equipment that may generate embers, sparks, flashing or other ignition sources and normally occur during cutting, grinding, brazing and/or welding operations. These operations present a severe fire hazard as they can introduce ignition sources into random areas of an organization's facilities.

The National Fire Protection Association (NFPA) estimates that approximately 6 percent of all industrial fires are caused by the absence of or improper hot work procedures and account for millions of dollars of property loss every year. While it is understood that hot work operations are necessary to properly maintain facilities, repair damaged or failing equipment and used during renovation and new construction activities, it is imperative for organizations to implement a properly managed hot work process to effectively reduce the likelihood of fire caused during these operations. In fact, fire safety professionals agree that implementing a properly managed hot work process is the single most successful method of controlling of fires during hot work operations.

A Hot work Permit system should be used whenever internal personnel or outside contractors conduct hot work outside a maintenance shop or other safe area designated specifically for hot work operations. An effective system involves management support, written procedures, trained employees, and documentation. Each of these areas is covered in the information that follows and can be utilized in the establishment and implementation of a comprehensive Hot work Permit Program.

## Management Support

Management must support the system that is developed. This includes but may not be limited to the following:

- Ensure available training budget for employees and supervisors
- Support disciplinary procedures when employees fail to follow protocol. Even when it does not result in a fire.
- Involve all necessary departments in the development of processes including maintenance, plumbing, HVAC and construction departments, procurement, and operations.
- Enforce "stop work" processes when employees, contractors, contracted workers and/or organizations fail to follow hot work protocol.
- Issue a commitment statement such as that which follows:

**[ORGANIZATION NAME]** has implemented a hot work program that must be utilized anytime that work activities produce a fire hazard. Hot work includes such activities as cutting, grinding, and any activities using an open flame or electrical current to brazing and/or weld piping. **[ORGANIZATION NAME]'s** policy must be adhered to by all employees, contracted employees and/or third-party contractors. Failure to follow this policy will result in employee disciplinary action leading up to and including termination. Third party contractors and/or their employees will be escorted from premises and all work hot work-related activities will cease until the issue is rectified.

## Hot Work Procedures

1. **[EMPLOYEE TITLE]** has the ultimate authority over the hot work program. The **[TITLE]** and/or Designated Hot Work Coordinator will submit hot work permits prior to all hot work that is conducted.

2. The Designated Hot Work Coordinator will conduct periodic inspections of areas where hot work is scheduled to take place.
3. Designated Hot Work Coordinator will maintain all documentation for up to 12 months after the work was completed. Training records will be provided to human resources, environmental health and safety or directly to the employees' supervisor to be maintained consistent with other safety and health training documentation.
4. Designated hot work coordinator will ensure that all employees have been trained on an annual basis to include initial hot work and refresher training, use of fire extinguishing equipment used for fire watch.
5. Designated hot work coordinator will provide orientation for all sub-contractors performing hot work as part of their contracted work.
6. Designated hot work coordinator will review the third-party contractor hot work program and address any discrepancies prior to the commencement of work.
7. Hot work permits will not last for more than one shift. New hot work permits will be issued for subsequent shifts.

### **Employee/Contractor Responsibilities**

- Equipment must be in good working order. Where compressed gases are used, they must be appropriately secured. Valves and regulators must be working properly.
- Hot work will only be allowed when an alternative less hazardous procedure is not available.
- Hot work permits will be obtained prior to the commencement of any hot work.
- Work areas will be thoroughly inspected for items that may contribute to a fire hazard and all combustible and/or flammable materials will be removed from the area as appropriate and practical.
- Combustible and flammable materials that are permanent must be covered with a fire blanket
- Fire watch is mandatory for all hot work procedures. This involves a 2<sup>nd</sup> employee. His/her responsibilities include observing the fire area and any area above, below and/or adjacent to the fire area during the fire watch period.
- The fire watch period lasts for a minimum of 30 minutes, up to one hour after the procedure is complete. Arrangements must be made to ensure that the fire watch is not overlooked when hot work activities are stopped or completed at the end of the shift.
- The duration of the fire watch may be extended, up to 3 hours, if the Permit Authorizing Individual requires it on the issued permit.
- Hot work permits are due back to the designated hot work coordinator upon completion of the fire watch.
- Fire & life safety systems must remain active during hot work procedures. For those circumstances where fire & life safety systems are not active, sprinkler impairment procedures must be followed.
- Fire watch personnel must be equipped with the appropriate type and size fire extinguisher or a charged fire hose. Fire watch personnel may not remove extinguishers in the area and use them for the fire watch.
- Fire watch personnel must be trained in activation of manual alarm pull stations, use of emergency phones and/or other equipment requiring manual activation.
- All areas must be swept clean.
- If floors are of combustible construction, they should be adequately protected to prevent ignition.
- Remove all flammable liquids from the area and clean up any oily deposits.
- Move combustibles at least 35 feet from hot work operations. If combustibles cannot be moved, they must be protected by metal guards or by flameproof curtains or covers. Do not use ordinary tarpaulins.