



# MONTHLY SAFETY NEWSLETTER SEPTEMBER /OCTOBER 2020

"SERVICING THE SHIPS THAT SERVE OUR COUNTRY"

## HOT WORK - A HOT TOPIC

### What is Hot Work?

Hot work is any activity or process that involves open flames or that generates sparks or heat and includes but not limited to burning, welding, or similar operation that is capable of initiating fires or explosions. Hot work also includes other activities with the potential to create a source of ignition such as cutting, brazing, grinding, soldering or hot riveting.

The OSHA HOT WORK STANDARD 29 CFR 1910.251-257 defines practices that should be implemented during the performance of hot work. This standard covers the safety requirements of the different types of welding processes.

Because hot work tools are highly portable source of ignition, improperly conducted hot work is a major cause of fires and explosions which have resulted in extensive property damage, serious personnel injury and worker deaths.

### Hot Work Definitions

**PERMIT AUTHORIZING INDIVIDUAL (PAI)** – Who would that be? It is the departmental employee who is trained and authorized to issue a hot work permit by management.

**FIREWATCH** – The employee who is trained in hot work safety and monitors the hot work area for changing conditions, watches for fires and extinguishes them if possible.

**DESIGNATED AREA** – Is a permanent location approved for routine hot work operations made safe by the removal of all possible sources of combustion that could be ignited by the hot work tool.

**CONTROLLED AREA** – Is a work area in which safe conditions for hot work exist or where safe conditions can be created by moving or protecting combustibles. **A hot work permit is required in a controlled area.**

**NON-PERMISSIBLE AREA(S)/LOCATION** – Is a location which hot work is **PROHIBITED**. Fires and explosions caused by improperly conducted hot work can have deadly consequences. In the last decade there have been numerous worker injuries and deaths in general industry that have resulted from not following proper hot work procedures.

**WELDING HELMET** – Heat-resistant fabric designed to be placed in the vicinity of a hot work operation. Intended for use in horizontal applications with light to moderate exposures such as that resulting from chipping, grinding, heat treating, sand blasting and light horizontal welding.

**WELDING CURTAIN** – Heat-resistant fabric designed to be placed in the vicinity of a hot work operation. Intended for use in vertical application with light to moderate exposures such as the resulting from chipping, grinding, heat treating and light horizontal welding.

**WELDING PADS** – Heat-resistant fabric designed to be placed directly under a hot work operation such as welding or cutting. Welding pads are intended for use horizontal applications with severe exposures such as that resulting from molten substances of heavy horizontal welding. These pads are designed to prevent the ignition of combustibles that are located adjacent to the underside of the pad.



**CAUTION**

**HOT WORK PERMIT  
REQUIRED IN  
THIS AREA**

## Hot Work Hazards

**FIRE HAZARD** – Molten metal, sparks, slag, and hot work surfaces can cause fire or explosion if precautionary measures are not taken. FLYING SPARKS are the main cause of fires and explosions in welding and cutting. Sparks can travel **up to 35 feet** from the work area. Sparks can pass through or become lodged in cracks, clothing pipe holes and other small openings in floors, walls to partitions which can cause fires to start. **COMBUSTIBLE MATERIALS** are anything that is combustible or flammable and is susceptible to ignition by cutting and welding.

**EXPLOSION HAZARD** – Welding and cutting can cause explosions in spaces containing flammable gases, vapors, liquids or combustible dusts, and tanks and vessels that contain or have held flammable.

**PHYSICAL AND HEALTH HAZARDS** – Associated with hot work such as: Burns, Sparks, Electric Shock Hazards, Optical (UV) radiation and inhalation of welding fumes. Engineering controls, PPE and safe work practices safeguards the welder from many physical and health hazards. Who would that be? It is the departmental employee who is trained and authorized to issue a hot work permit by management.



## Hot Work Permit Program

**Hot work is allowed in TWO types of locations:**

**DESIGNATED AREA and CONTROLLED AREA.** Hot work is **NEVER** permitted in certain types of locations where safe conditions do not exist! In a CONTROLLED AREA, a HOT WORK PERMIT, must be obtained by the hot work operator. The permit must be obtained from the designated PERMIT AUTHORIZING INDIVIDUAL (PAI) before the hot work can proceed in a controlled area. The permit includes a checklist of precautions, each of which must be considered and then implemented if the PAI determines that is applicable to the specific situation such as, ensuring fire protection equipment is available in the work area, controlling potential and existing fuel sources and posting a fire watch when required.

**NON-PERMISSABLE AREA(S)/LOCATIONS.** Hot work **SHALL NOT** be permitted in areas not authorized by management, in sprinklered buildings where sprinklers are impaired, in the presence of explosive atmospheres, in the presence of uncleaned or improperly prepared equipment, drums, tanks or other containers that have previously contained flammable materials that could develop explosive atmospheres; areas with an accumulation of combustible dust that could develop explosive atmospheres.

**ANALYZE THE HAZARDS** – Prior to initiation of hot work, perform a hazard assessment that identifies: the scope of the work; potential hazards; methods of hazard control. After analyzing the hazards, see if there are any HOT WORK ALTERNATIVES – work method is termed “COLD WORK”

### What is a Hot Work Permit?

If it is decided that a hot work permit is required for a job task, the HOT WORK PERMIT must be obtained by the hot work operator (AIT employee) from the Permit Authorizing Individual (PAI). The PAI is designated by management before the hot work can proceed in a controlled area. The permit includes a checklist of precautions, each of which must be considered and then implemented if the PAI determines that it is applicable to the specific situation. Fire Protection Equipment (Fire Extinguishers, Fire Sprinklers, Hoses stream, Proximity to the Fire Alarm) must be available, in service and full operable.



Fuel Sources within 35' from hot work are easily ignited, so within this area:

- Combustible materials must be removed or shielded
- The floor must be swept clean of combustible material
- The absence of hazardous atmospheres and/or flammable materials must be verified, steps must be taken to ensure that none are introduced, and adequate ventilation must be assured.
- Combustible floors must be covered with damp ...
- Openings or cracks in walls, floors or ducts through which sparks might travel and ignite combustibles in other locations must be covered. Conveyer systems must be shut down.
- Fire resistant tarps must be suspended beneath overhead work.
- If hot work is done on one side of a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating the combustibles.
- If relocation is impractical, combustibles shall be protected by a approved welding curtain, welding blanket, welding pad or equivalent rated ANSI/FM 4950.
- If it is impractical to relocate combustibles, a FIRE WATCH MUST be provided on the side opposite from where work is being performed.

**FIRE WATCH** is needed when there is a chance that fire might develop from combustible materials. A firewatcher is needed if combustible materials are located:

1. Closer than 35' from the hot work
2. More than 35' away from the hot work but might be easily ignited by sparks
3. Walls or floor openings within 35' expose combustible materials in adjacent areas including concealed areas spaces in walls and floors
4. Adjacent to the opposite side of partitions, walls, ceilings, or roofs

**FIREWATCHER** monitors the hot work area for changing conditions and watches for fires and extinguishes them if possible. FIREWATCHERS shall be familiar with the facilities and procedures for sounding the fire alarm and contacting SECURITY/FIRE DEPARTMENT in event of emergence. NOTE: When changing conditions are observed by anyone- whether the fire watch, hot work operator, PAI, or any other employee – that person should immediately halt the hot work on his or her own initiative! Every job site involving Hot Work requires a permit to document the hazards and the safeguards in place to ensure the planned hot work does not cause a fire. The form can also serve as the on-site permit completed by the hot work contractor and posted at the site to advise workers in the area that hot work is being performed at the job site.

In closing, all parties involved in the HOT WORK Operations are an important part of fire prevention. At AIT, we take your roles very seriously as you should as well. BE SAFE!

---

## Employee of the Month

### TIMOTHY KING



Tim is known on the deck plates as a utility mechanic and he saw the opportunity during the repair of the Stern Gate Seals onboard the Kearsarge. Working with a small team, Tim led the repair and installation of the Stern Gate seals, often working 14 to 16-hour days in order to meet a critical milestone. He displayed determination and effort that embodies AIT core values and his contributions. On behalf of AIT, we would like to extend a big thank you for the job that you do!

---