Hot Work Safety Guidelines

Purpose

Hot Work activities present unique hazards to workers that could result in injury, and that could also result in the potential loss of property if not controlled. This document sets forth the minimum safe work practice requirements when Hot Work activities are performed at the University's facilities. It is intended to provide University departments that perform or contract for these types of activities with general guidance on developing or improving their own safe work procedures based on the types of hazards, and conditions present, and also to prevent disruptions to University community activities due to unnecessary activation of building fire detection and alarm systems.

Objective

Consistent with the University Environmental Health and Safety (EHS) Policy, each University department that performs or contracts for activities deemed as hot work are responsible for its safe completion and shall ensure for the implementation of these guidelines. It is the responsibility of every Supervisor to adhere to the safe work practices listed in this document and to ensure a safe working environment that complies with the Ontario Occupational Health and Safety Act (OHSA) and applicable regulations, standards, and guidelines.

Scope

These guidelines are applicable to any University departments that performs or contracts for activities deemed as hot work.

Alternatives

Prior to carrying out any hot work, it should first be determined if there is any alternative method which could be used instead. Alternatives include:

- Bolting versus welding
- Hydraulic shears or reciprocal saw versus torch or radial saw cutting
- Mechanical clamps versus welding
- Threaded final pipe or tube connections versus torch soldered joints
- Roof covering system which is not torch-applied
- Hand filing versus mechanical grinding

Hot Work Safety Practices

5.1 General Safety Precautions

- Communication device(s) is available for immediate use in case of an emergency.
- Hot work permit is posted in a conspicuous location.
- Fire extinguishing device(s) are present, in service, and in good operating condition.
- Smoke/Heat detectors and sprinkler systems affected have been noted and temporarily disabled. While disabled the building's fire safety plan's alternative measures shall be implemented, and notification communicated to the building occupants.
- Hot work equipment is inspected, and is in good operating condition

- An assessment has been completed, and steps implemented to mitigate risks to workers when completing the work.
- Appropriate Personal Protective Equipment is provided and in good condition.

5.2 Requirements Within 15 Metres of Hot Work

- Work area is clearly delineated with signs and/or barriers to restrict access.
- Smoke/Heat detectors and sprinkler systems are covered if vulnerable due to the work.
- Area is ventilated with appropriate equipment if there is a risk due to atmospheric hazards.
- Nearby activity that could contribute to atmospheric hazards shall be suspended.
- Risk of explosive atmosphere is eliminated (gases, vapours, dust)
- All flammable liquids, dust, powders and oily products have been removed from the area.
- All combustible materials have been removed from the work area, or are protected with fire-resistive tarpaulins/blankets.
- Floors are swept.
- Openings in floors, walls, and ceiling are covered with non-combustible materials. (Includes return air plenums)

5.3 Work on or within Partially Enclosed Equipment

- Confined Space Permit Required.
- Hot Work shall not be performed on a totally enclosed container.
- Partially enclosed equipment shall be cleaned of all combustibles, and be purged of any materials which could create an explosion hazard. Testing is required to confirm the absence of an explosion hazard.
- Piping an equipment shall be removed from service, isolated, and vented.

5.4 Hot Work Monitoring (During and after work completion)

- A Fire Watch shall be established to monitor the work and adjoining areas during the course of the work, and for a minimum of 3 hours upon its completion.
- The Fire watch shall be trained in the use of the fire extinguishing device(s) available, and know the location of the nearest fire alarm pull station.

Figure 1: Sample Hot Work Permit

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Sample Hot Work Permit

As per the University of Guelph Hot Work Policy, this permit shall be completed by Supervisors or designates for all Hot Work performed by U of G staff and for any hot work performed by approved maintenance contractors. The permit shall be posted at the worksite prior to performing Hot Work. Hot Work includes, but is not limited to brazing, cutting, grinding, soldering, torch applied roofing, welding, including operations that create dust that activates fire alarm systems.

Immediately before performing Hot Work, Contact Emergency Services and provide information regarding your work location.
In Case of Fire: Activate the nearest fire alarm, then call Emergency Services

Instructions	Required Precautions Checklist
Supervisor or Designate: 1. Verify precautions listed at right (or do not proceed with the work). 2. Complete form and issue to hot worker.	**General Requirements** ❑ Contact Supervisor or designates as applicable regarding suppression of the affected fire alarming system. ❑ Hot work equipment in good repair. ❑ Appropriate personal protective equipment worn. ❑ Suitable fire extinguisher(s)/water source near and operable, fire alarm, pull station and nearest University phone located. ❑ Lockout/tagout implemented if required, piping valved or blanked off, HVAC isolated as required. ❑ Fan or ventilation equipment available to provide adequate ventilation. ❑ Gas cylinders have been properly secured and positioned a safe distance from the work.
Hot work being done by ❑ U of G Staff ❑ Maintenance Contractor	
Date / Work Order/Project Number	
Location/Building, Floor, Room Number, Space	
Work Description	
Name of Hot Worker	**Within the Space or Within 15 Metres (50 feet) of Work** ❑ Combustible materials, flammable liquids, dust, lint and oily deposits removed and combustibles moved away from the opposite side of wall/ceiling or protected with fire-resistive tarpaulins/blankets. ❑ Combustible floor and walls covered as appropriate with fire-resistive tarpaulins/blankets. ❑ All floor and wall openings covered. **Work on Walls and Ceilings** ❑ Construction is non-combustible and without combustible covering or insulation. ❑ Combustibles on other side of walls is moved away. **Work on Enclosed Equipment** ❑ Confined space permit required ❑ Enclosed equipment cleaned of all combustibles. ❑ Pressurized vessels, piping and equipment removed from service, isolated and vented. **Hot Worker / Fire Watch** ❑ Trained in the use of fire extinguishing and alarm equipment. ❑ To monitor immediate area for a minimum of 30 minutes. **Fire Watch** ❑ To monitor immediate area and adjoining areas, above or below for 3 hours or for prescribed time after hot work including coffee or lunch break.
Worker's Contact Number	
Name of Fire Watch	
Name of Supervisor or Designate	
Supervisor's or Designates Contact Number	
I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work. Signature of Supervisor or Designate:	
Hot Work Start Time / Hot Work Completion Time	
Fire Watch Completion Time	
Signature of Hot Worker	
Signature of Fire Watch	Permit Expires / Date / Time / AM PM

Return Permit to your Supervisor when hot work, monitoring and/or fire watch is completed.

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