Millersville University

Hot Work Procedure

Department of Environmental Health and Safety

EHS Standard Operating Procedure- 003

12/21/22

TABLE OF CONTENTS

1.0 PURPOSE:

Millersville University (MU) is committed to preventing loss of life and property, and maintaining a safe environment for students, faculty, staff, and visitors. This procedure is designed eliminate or control potential ignition sources resulting from welding, flame cutting, soldering or similar activities which may produce flames or sparks. Provide a safe work/learning environment in University buildings where temporary hot work may be performed. Potential health, safety and property hazards can result from the fumes, gases, sparks, hot metal and radiant energy produced during hot work. These, and other hazards, can be reduced through the implementation of effective controls as outlined in this Policy.

2.0 SCOPE:

This policy applies to all Millersville University employees and contractors involved in welding, cutting or braising of metals, in areas other than those designated specifically for that purpose.

3.0 RESPONSIBILITY:

The project manager, Director of Maintenance & Operations, and/or Assistant Vice President for Facilities shall maintain awareness of processes requiring hot work and implementation of this procedure. The Director of Environmental Health and Safety will review all Hot Work Permits and ensure operations are conducted in accordance with the permit requirements and this procedure.

It is the responsibility of each University employee and contractor engaged in hot work to implement controls that will eliminate or greatly reduce the hazards generated by their work, for the protection of other University employees, students and visitors.

Each supervisor, whose employee(s) engage in hot work, shall ensure that the guidelines in this Policy are implemented and hazards are controlled so as not to present an exposure to University employees, students and visitors. It is also the responsibility of the supervisor to ensure the employee(s) they designate to perform hot work utilize the necessary procedures and equipment, so as to minimize that employee's own exposure to the hazards generated.

4.0 DEFINITIONS

Combustible: able to catch fire and burn easily

Fire Watch: a temporary measure intended to ensure continuous and systematic surveillance of a building**,** or portion of the building, by one or more qualified individuals for the purpose of identifying and controlling fire hazards, detecting early signs of fire, activating an alarm and notifying the fire department in the event of a fire

Hot Work: any activity or process that generates a source of ignition**,** this could be through a flame, heat or a spark. Sometimes, hot work can be direct, e.g. the equipment or tool creates a flame or produces heat. Other times it may be indirect, e.g. using an abrasive wheel to cut metal produces sparks

Hot Work Permit: the document, other than a Contract or a License, issued by the Agency under which an Operator acquires the right to conduct operations involving electric or gas welding, cutting, tapping, brazing, or similar flame or spark producing operations

Noncombustible: incapable of igniting and burning when subjected to fire

5.0 PROCEDURES

No employee of the University, contractor hired by the University, or subcontractor hired by the contractor shall perform any hot work, as defined above, unless a hot work permit is obtained.

- Hot work is any temporary operation involving open flames or producing heat/sparks which includes, but is not limited to brazing, open-flame soldering, oxygen cutting, grinding, arc welding/cutting, oxy-fuel gas welding, hot taps, and torch applied roofing that are capable of initiating fires or explosions.

This policy does not apply to activities such as cooking, electric soldering irons, or laboratory equipment (e.g. Bunsen burners or other lab equipment). This procedure does not apply to outdoor activities when they are located more than 35 feet from buildings of combustible construction or surroundings

5.1 UNIVERSITY EMPLOYEE

The supervisor shall contact EHS to obtain the Hot Work Permit **(Attachment A)** and will provide it to his/her own employee(s). Each permit is job specific. At the end of the job, EHS will keep the permit on file for a period of not less than one year.

The employee(s) assigned to perform the hot work is to hang the Hot Work Permit at the job site.

5.2 OUTSIDE CONTRACTOR

Prior to starting a project that requires hot work; the supervisor of the employee performing the hot work or the project manager of the contractor/subcontractor shall obtain a hot work permit **(Attachment A)** from EHS.

5.3 FIRE WATCH

A fire watch must be maintained when hot work is performed in a location where the following condition(s) exist:

- Combustible materials in building construction or building contents are closer than 35 feet to the point of operation of the hot work
- Combustible materials are more than 35 feet away, but are easily ignited by sparks
- Wall or floor openings within a 35 feet radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors
- Combustible materials are adjacent to the opposite side of partitions, walls, ceiling, or roofs and are likely to be ignited
- Deactivation of any automatic fire detection devices present within 35 feet of the hot work.

The fire watch shall:

- Be aware of the inherent hazards of the work site
- Ensure safe conditions are maintained during the hot work operation
- Have the authority to stop the hot work operations if unsafe conditions develop
- Have fire extinguishing equipment immediately available
- Activate emergency response in the event of a fire

If any automatic fire detection devices are deactivated, the Fire Safety System Impairment/Fire Watch Procedures should be followed in addition to the above activities. The fire watch shall be maintained during all breaks and one hour after

completion of the hot work operation in order to detect and extinguish smoldering fires at the hot work site, on the floors above, below and adjacent to the hot work site if applicable. Fire watch responsibilities should rotate between personnel at 2-hour intervals.

5.4 CONFINED SPACES

Any hot work done in confined spaces, whether designated as Permit Required or non-permit required, will follow Permit Entry Required for confined spaces. The very nature of hot work in a confined space makes the atmospheric hazards of that space a danger to employee health. Consult Environmental Health and Safety before conducting hot work in any confined space (labeled or otherwise).

6.0 TRAINING

It is expected that any University employee engaged in hot work has received training and developed the skills necessary to work in a safe and professional manner.

Environmental Health and Safety will train and consult with any employee, at the request of their supervisor, on the topic of personal and fire safety as it relates to hot work.

All supervisors with a need to issue hot work permits will be trained in their completion, and the guidelines of this Policy, with the assistance of Environmental Health and Safety.

ATTACHMENT A: HOT WORK PERMIT

Millersville University

HOT WORK PERMIT

CAN THIS JOB BE DONE WITHOUT HOT WORK, OR IN THE SHOP?
IF NOT, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE SPRINKLERS ARE IN SERVICE AND FIRE EXTINGUISHERS ARE READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks.
This includes, but is not limited to, Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing, and Welding.

Note: The Required Precautions are not optional. They are required for fire-safe hot work. Please explain all "No" responses below.

Instructions

The Permit-Authorizing Individual must:

a) Verify precautions listed at right (or do not proceed with the work)
b) Complete and retain this page
c) Give the second page to the person doing the work.

Who, When, and Where?

Hot Work Being Done By
☐ Employee
☐ Contractor

Date	Job/Work Order No.

Location/Building and Floor

Nature of Job/Object

Name of Person(s) Doing Hot Work

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 work.

Signature of Permit-Authorizing Individual

Permit Expiration

Expiration Date	Expiration Time	☐ AM ☐ PM

Name of Assigned Fire Watch

THIS PERMIT IS GOOD FOR 24 HOURS ONLY!

Required Precautions Checklist

☐ Available Sprinklers in Normal Automatic mode and valve open.
☐ Hot Work equipment in good repair.

Assess 35 ft radial "sphere" of work for potential fire hazards:

☐ Floors, work level and below, cleaned or protected.
☐ All other combustibles removed or shielded from sparks.
- Clean horizontal surfaces above and below where possible.
- Wet combustible floors or cover with damp sand or other shield
- Remove flammable liquids, dust, lint, combustible waste, oil deposits, etc., where possible.
- If removal/cleaning is impractical, protect with fire-retardant covers, or shield with fire-retardant guards and/or curtains.

☐ Transmission or conveying of sparks to adjacent areas eliminated or protected.
- Tightly cover wall/floor openings with fire-retardant material.
- Where openings cannot be sealed, suspend fire-retardant tarpaulins to help protect areas beneath.
- Isolate or shut down fans and conveyors to prevent the capturing and conveying sparks to other areas.

☐ Explosive atmosphere eliminated or potential not present.

Work on walls, ceilings or enclosed equipment:

☐ Construction materials verified as noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls relocated or protected.
☐ Enclosed equipment cleaned and protected from all combustibles.
☐ Containers purged of flammable liquids/vapors.

Fire watch/hot work area monitoring requirements:

☐ Continuous fire watch provided during and for *at least 60 minutes* after hot work, including all breaks.
☐ Fire watch supplied with suitable extinguishers/hoses.
☐ Fire watch trained in the use of fire equipment and sounding alarm.

Other precautions that may be required:

☐ Fire watch provided for adjoining areas, above, or below.
☐ Confined Space or Lock-Out-Tag-Out required/used.
☐ Area smoke or heat detection disabled to eliminate false trip.

Other: _____

Comments:

_____

_____

_____