

## Hot Work Policy for Work Performed By University Employees 03/13/18 - Last Revision

### **INTENT:**

The intended purpose of this Policy is to 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, and sparks, hot metal, open flames 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. This Policy is written to be in compliance with OSHA 1910 Subpart Q and NFPA 51B.

### **SCOPE:**

This policy applies to all University at Albany employees and temporary hires involved in hot work, including burning, welding, cutting, grinding, heat treating or braising of metals or a similar operation that is capable of initiating fires or explosions, in areas other than those designated specifically for that purpose (even work performed outside).

### **RESPONSIBILITIES:**

**Management:** Shop Coordinator, Shop Supervisor and Fire Safety Staff

- Management or a designated agent shall be responsible for the safe operations of hot work activity.
- Management shall establish permissible areas for hot work.
- Management shall designate a permit authorizing individual (PAI).
- Management shall ensure that all individuals involved in the hot work operations, are familiar with the provisions of this policy.
- Management shall discuss this policy and planned projects completely, including the type of hot work to be conducted and the hazards in the area.
- It is the responsibility of the Fire Safety staff, when requested, to provide their professional expertise in controlling potential fire hazards to Supervisors and University staff involved in the preplanning of a job that requires hot work.

**Permit Authorizing Individual (PAI):** PAI is generally a Shop Supervisor or their designee. In conjunction with management, the PAI shall be responsible for the safe operation of hot work activities. The PAI shall consider the safety of the Hot Work Operator and Fire Watch Operator with respect to personal protective equipment (PPE) for other special hazards beyond hot work.

- The PAI shall determine site-specific flammable materials, hazardous processes, or other potential fire hazards that are present or likely to be present in the work location.
- The PAI shall ensure the protection of combustibles from ignition by the following means:
  - (1)\*Considering alternative methods to hot work, such as cold cutting methods or drilling
  - (2) Moving the work to a location that is free from combustibles
  - (3) If the work cannot be moved, moving the combustibles to a safe distance of at least 35 ft (11 m) or having the combustibles properly shielded against ignition by a welding screen or blanket. As sparks can travel long distances, there should be no gaps in the barriers or blankets. Welding screens should extend all the way to the floor to prevent sparks from leaving the work area and welding blankets should completely cover

combustibles and leave no gaps. All wall, ceiling and floor gaps need to be protected and/or sealed.

- (4) Scheduling hot work so that operations that could expose combustibles to ignition are not begun during hot work operations
- It is the responsibility of each Shop Supervisor, whose employee(s) engage in hot work, to insure 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 Shop Supervisor to insure that the employee(s) they designate to perform hot work is trained on this policy, and utilizes the necessary procedures and equipment, so as to minimize that employee's own exposure to the hazards generated. The Shop Supervisor shall also ensure all applicable University policies are followed during the entire hot work project, including before the hot work commences.
- All equipment shall be examined to ensure it is in a safe operating condition by a knowledgeable designee.
- When found to be incapable of reliable safe operation, the equipment shall be repaired by qualified personnel prior to its next use or be withdrawn from service and tagged out of service.
- PAI shall ensure that only approved apparatus, such as torches, manifolds, regulators or pressure reducing valves, and acetylene generators, are used.
- PAI will determine if a fire watch is necessary, depending on the fire hazards nearby the hot work area. See below.
- **PAI shall issue the hot work permit only after all the above has been completed. PAI must notify the Power Plant Base immediately before the hot work commences, so that the date, time and location of the hot work is logged in at the Plant.**
- **PAI shall inspect hot work area before any hot work commences and at least once per day while the permit is in effect to ensure a fire safe area. This inspection should be documented. This can be done by the PAI initialing the permit and denoting the date and time of the inspection on the permit.**

**Hot Work Operator:** The Hot Work Operator shall handle the equipment in a safe manner, minimizing risk to lives and property.

- The Hot Work Operator shall have their supervisor's and PAI's approval before starting any hot work operations.
- All equipment is to be in optimal working order. Equipment not in optimal working order shall be repaired or replaced prior to beginning hot work.
- The Hot Work Operator shall stop all work if unsafe conditions develop, and notify the PAI and/or their Supervisor immediately. The Shop Supervisor and/or PAI shall determine when the hazard is abated and the work may resume.

**Fire Watch Operator:** If deemed necessary by the PAI, a fire watch will be implemented by the Fire Watch Operator. The Fire Watch Operator must be someone other than the Hot Work Operator. The duties of the Fire Watch Operator are listed under the section entitled Fire Protection. \* Important – As most fires caused by hot work occur after the work has been completed, a fire watch must continue for at **least 30 minutes** after the hot work has been completed. The PAI may extend the length of the fire watch depending on the fire hazards present.

**According to OSHA 1910.252 and NFPA 51B:**

A fire watch shall be required by the PAI when hot work is performed in a location where other than a minor fire might develop, or where the following conditions exist:

- 1. Combustible materials in building construction or contents are closer than 35 ft (11 m) to the point of operation.
- 2. Combustible materials are more than 35 ft (11 m) away from the point of operation but are easily ignited by sparks.
- 3. Wall or floor openings within a 35 ft (11 m) radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
- 4. Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

## **PROGRAM DESCRIPTION:**

### **General Cutting and Welding Controls**

If possible, perform the hot work in designated shops only. In the event this is not possible, then areas where hot work is to be done should be properly prepared prior to work commencement. The following controls should be implemented:

- Cutting and welding operations are restricted to properly trained and authorized individuals only.
- Move combustible materials at least 35 ft (11 m) from the work site. If this is not possible, then protect combustible items with metal guards or flameproof curtains or covers. (Ordinary tarpaulins or cloths are not acceptable protection).
- Cover floor, ceiling and wall openings/penetrations located 35 ft (11 m) or less to the work site, to prevent hot sparks from entering ceilings, walls or falling beneath floors to a lower level. All floors shall be swept clean before hot work is to commence.
- Use fire resistant curtains and/or tinted shields to prevent fire, employee burns and UV light exposure.
- Wooden floors must be covered with wet sand or some other noncombustible material.

### **Ventilation and Atmospheric Testing**

Hot work should not be conducted in the presence of flammable gases, vapors, liquids, or dusts (where an explosive concentration can develop). Atmospheric testing with a combustible gas meter prior to work commencement, and periodically thereafter, should be conducted, if the atmosphere in the work area has the potential to become hazardous. (Refer to the University Confined Entry Policy.)

Ventilation of the work site, either through local or general exhaust ventilation, should be adequate for the work performed. The vent terminator of a local exhaust system must not be located near operational air intakes to any University building.

### **Fire Protection**

The Fire Watch Operator, someone other than the Hot Work Operator, should perform fire watch duty, if deemed necessary by the PAI. This duty includes remaining on the work site for **at least 30 minutes** after hot work operations have ended. In addition, the following steps should be taken:

- A fire extinguisher rated not less than 2-A: 20-B: C must be available in shop areas where hot work is performed.
- **A fire extinguisher rated not less than 2-A: 10-B: C must be attached to all portable cutting and welding carts.**

- Building fire extinguishers shall not be removed from their location for use in hot work operations.
- Building fire extinguishers shall not be considered when providing the minimum required fire extinguishers for hot work operations. **An actual fire extinguisher of the appropriate size and type must be present in the area where hot work is being performed.**
- If a building or area is equipped with a sprinkler system, then that system must be operational when the hot work is performed. (\*\*If there is a question about the fire detection system, then refer to the Fire Safety Office before beginning any hot work.)
- **REPORT FIRES** via 911 System, Blue Light Automatic Dial Telephones (ADTs), calling 518 442-3131 or through the building fire alarm system manual pull station.
- Be aware of any smoke or heat detectors in the area before beginning the hot work. If necessary to avoid setting off the fire alarm for the building, Power Plant must be contacted to disable the smoke detectors in the immediate area. Once the hot work is completed, the Power Plant must be contacted to turn the detectors back on.

### **Personal Protective Equipment (PPE)**

PPE specifically designed for hot work should be provided to and utilized by employees performing the hot work. Shop Supervisors should consult the Environmental Health and Safety Office (EH&S), if they have a question regarding employee exposure and the PPE necessary to protect them.

### **Hot Work in Confined Spaces**

Any hot work done in confined spaces, whether designated Permit Entry or non-permit entry, will follow Permit Entry Required procedures 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 EH&S **before** conducting hot work in any confined space (labeled or otherwise). A combustible gas meter must be used before and during the hot work to ensure that there are no atmospheric hazards in the area.

### **Compressed Gas Cylinder Storage and Handling**

The safe storage and handling of compressed gas cylinders is an important part of cutting and welding operation. The following steps should be followed:

- Oxygen and fuel gas cylinders should be stored separately with the protective valve caps in place. Except when in use, oxygen and fuel gas cylinders should be stored at least 20 ft apart or separated by a noncombustible wall at least 5 ft high.
- Cylinder carts equipped with a cylinder restraint, such as a chain or strap, must be used for the transporting of all compressed gas cylinders.
- All cylinders must be secured, when stored or in use. Securing devices in storage should prevent the tipping over of the cylinder. When in use, cylinders should remain on a welding cart and be secured to that cart.
- All cylinders not in use must have their protective valve cap in place.
- Regulators must be compatible with the cylinder and its contents. Regulators are gas

specific, so make sure the correct regulator is used.

### **HOT WORK PERMITS:**

**Hot work cannot be performed without the issuance and posting of a hot work permit\* prominently at the job site, except in those shops that have areas dedicated to hot work.**

#### **The Hot Work Permit procedure is as follows:**

The PAI will issue the Hot Work Permit to the Hot Work Operator only after reviewing the safety of the job site for hot work to be performed and the safety precautions being taken by the Hot Work Operator. Each permit is job specific and the PAI will determine the length of time for which the hot work permit is valid (**not to exceed 24 hours**). **The Permit must have the emergency numbers for the University (911 or 518 442-3131 for the University Police and 518 442-3444 for the Power Plant Base) listed on it.** The PAI is then responsible for notifying Power Plant Base, having the date and time of the job put in the problem logbook, prior to commencing work. At the end of the job, the Shop Supervisor or PAI should take the completed permit, attach it to the original permit and then give it to the Customer Service Office in HU 0043 to keep on file for at least a year. **The employee(s) assigned to perform the hot work (Hot Work Operator) is to hang the Hot Work Permit at the job site in a prominent location.**

### **TRAINING:**

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

### **IMPORTANT PHONE NUMBERS:**

**POWER PLANT: 518 442-3444**

**UNIVERSITY POLICE DEPARTMENT: 911 FROM AN ON CAMPUS PHONE OR 518 442-3131 FROM A CELL PHONE**

**CUSTOMER SERVICE: 518 442-3480**

**EH&S: 518 442-3495**

**FIRE SAFETY: 518 442-3400**

### **REFERENCES:**

University at Albany's Confined Space Entry Policy  
OSHA's Welding, Cutting and Brazing, 29 CFR 1910 Subpart Q  
OSHA's Personal Protective Equipment, 29 CFR 1910 Subpart I  
Permit Required Confined Spaces, 29 CFR 1910.146  
Standard for Fire Prevention During Welding, Cutting and other Hot Work NFPA 51B  
Welding and Other Hot Work: Chapter 26 NYS Fire Code

**\*Blank Hot Work Permits can be found in the Customer Service Office in HU 0043.**