HOT WORK MANAGEMENT PROGRAM

Rose-Hulman Institute of Technology
Office of Environmental Health & Safety

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HOT WORK MANAGEMENT PROGRAM

1.0 Purpose

The Rose-Hulman Institute of Technology Hot Work Management Program is to:

- Inform employees of the hazards associated with welding, cutting, and brazing activities
- Provide employees with the tools to protect themselves when performing welding, cutting, and brazing, or working near such activities
- Prevent fires often associated with welding, cutting, and brazing activities
- Prevent injuries, loss of life, and loss of property associated with fires resulting from welding, cutting, and brazing
- Comply with Indiana Occupational Safety and Health Act (IOSHA) and other applicable Federal and State regulations.

2.0 Regulatory Reference

29 CFR 1910.252, Welding, Cutting and Brazing General Requirements
29 CFR 1910.253, Welding, Cutting, and Brazing, Oxygen-Fuel Gas Welding and Cutting
29 CFR 1910.254, Arc Welding
29 CFR 1910.255, Resistance Welding
29 CFR 1926.351, Welding and Cutting for Construction
NFPA 51B, Standard for Fire Prevention in Use of Cutting and Welding Processes

3.0 Scope

This document is intended as a master document that addresses regulatory requirements. Details specific to implementing the program for a specific department or job can be added by the user in the appendices of this program.

This program applies to all Rose-Hulman employees who perform welding, cutting, or brazing, their supervisors and all employees who work near welding, cutting or brazing activities. It also applies to all contractors performing hot work on Rose-Hulman property.

4.0 Elements of the Program

The terms "cutting, welding, and brazing" will be used interchangeably with "hot work" throughout this document.

Preparations for hot work (by the “authorized individual”)
- Check to see if there are fire protection devices in the area where work is to be performed and ensure they are operable.
  - Automatic sprinklers
  - Fire extinguishers
  - Other
- Identify person to perform fire watch and make certain fire watcher is prepared.
  - Fire extinguishing equipment readily available
  - Fire watcher trained in use of extinguishing equipment
Familiar with alarm system and how to activate

- Define conditions requiring fire watch.
  - Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation
  - Appreciable combustibles are more than 35 feet away, but are easily ignited by sparks
  - Wall or floor openings within a 35-foot radius expose combustible materials in other areas, including concealed spaces in walls and floors
  - Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings or roofs, and are likely to be ignited by conduction or radiation.

- Perform site inspection prior to beginning hot work.
- Identify special precautions to be followed:
  - Remove any free combustible materials, such as wood or aluminum shavings within a 35-foot radius of the work site
  - If floor is combustible (e.g., wood), floor shall be kept wet or protected by fire-resistant shields
  - If walls are combustible, fire-resistant shields or guards shall be used
  - Ascertain there are no conditions present which would preclude hot work, such as the presence of explosive materials and explosive atmospheres
  - Shut down or suitably protect ducts and conveyor belts that could carry sparks to other areas
  - Determine whether auxiliary ventilation will be required and if so, install

- Check all equipment to ensure proper working order.
- Complete and sign hot work permit (See Appendix C).

Performing hot work (by the authorized individual).
- Post hot work permit and other cautionary signage
- Notify anyone working in or near the area to vacate the area (35-foot radius), unless directly involved in the job
- Make certain fire watch is in place
- Make certain persons performing hot work have and are using all necessary personal protection equipment (PPE)
- Perform required work
- At completion of work, continue fire watch for at least 30 minutes
- Sign off hot work permit at end of fire watch

After the hot work job (by the authorized individual).
- Any surfaces which remain hot will be labeled with a warning sign to that effect
- All gas cylinders will be turned OFF at the cylinder valve
- All equipment will be inspected for wear or damage
- All equipment will be stored in a secure place, away from sources of flame and explosive materials
5.0 Responsibility

The Office of Environmental Health and Safety Management (EHS) is responsible for preparation of the written Hot Work Management Program.

Any department head whose workers perform hot work has ultimate responsibility for administering the Hot Work Management Program. Supervisors of such workers are responsible for making certain the workers are properly trained in use of all cutting, welding and brazing equipment, the required PPE, and the safety precautions to be taken. Supervisors are responsible for making certain the needed equipment, including all PPE and fire extinguishing equipment, is available and in proper working condition. Supervisors are responsible for making certain that workers wear the proper PPE. Supervisors or their designee are responsible for pre-work inspections and completing the hot work permit.

Employees performing hot work are responsible for following all procedures and safe work practices, wearing proper PPE, and performing the required job. Employees who are near the hot work site are responsible for understanding the Hot Work Permit Management Program and working accordingly. Fire watchers are responsible for performing the fire watch duties only during the designated fire watch period.

Failure to comply with the above responsibilities may result in disciplinary action.

6.0 Training and Recordkeeping

All workers performing welding, cutting, or brazing will have received appropriate training in use of all equipment. Training will be provided by a person experienced in and qualified in welding, cutting, or brazing. They shall also be trained in the safety and health issues associated with these tasks. This training can be provided by EHS or the employee's supervisor.

Fire watchers will be trained to use the fire alarm system and fire extinguishing systems. Fire watchers will also be trained in recognition of situations and conditions likely to result in fire. This training can be provided by EHS.

All workers in the job area will receive brief safety training from the person in charge of the job. This training will include recognition of high-risk activities and situations, work that can or cannot be performed in the area during the job, and fire exit procedures.

All hot work permits shall be retained after the job for a period of at least six months.
APPENDIX A: Definitions

**Authorized Person:** The person responsible for all activities associated with the hot work permit.

**Fire Watch:** Oversight of the hot work operations by a person designated to watch for fires and respond to them per standard procedures.

**Hot Work:** Work involving welding, cutting, or brazing where heat is produced and sparks may be produced.

**Hot Work Permit:** A formal document outlining the purpose of the work, all required precautions, and any special considerations which must be approved by the "authorized person" before work can begin.

**Welding, Cutting or Brazing:** Processes which generate significant heat and sparks as to be able to ignite any flammable materials in the area.

APPENDIX B: SPECIFIC PROCEDURES
*Specific procedures for specific jobs may be appended here.*

APPENDIX C: FORMS, LINKS TO FORMS
Sample Hot Work Permit

HOT WORK PERMIT
TO BE DISPLAYED ON THE WELDING OR CUTTING APPARATUS AND RETURNED TO THE RESPONSIBLE OFFICER ON COMPLETION OF THE WORK.

Permission granted to: (Name)

To use: (Type of equipment)

In (location)

On (date)

From (time)

To (time completed)

1. All combustible materials removed or made safe
   □
2. No flammable liquids, vapors, gases or dusts present
   □
3. Extinguishers/hoses provided on site.
   □
4. Operator know how to use fire equipment.
   □
5. Operator knows location of telephone/fire alarm
   □
6. Site inspected after completion of work.
   □

Permit issued by (responsible officer)

HOT WORK PERMIT

(name)
is hereby authorized to carry out cutting*, burning*, welding*
("cross out where not applicable)
Other work on

(plant or equipment)
as from

(Date, time)
Signed

Factory manager

I have inspected the work. The permit has been withdrawn as from

(Date, time)
Signed

Factory manager (or nominee)