SUNY Geneseo
ENVIRONMENTAL HEALTH & SAFETY

Policy No.: HS 001	**Approved by: George Stooks**
Title: Hot Work Procedure	**Date: April 30, 2009**
Revision No.: 0	**Page 1 of 7**
Prepared by: Chuck Reyes	

I. PURPOSE

The purpose of this procedure is to establish minimum standards for safely conducting hot work tasks to help mitigate hazards that could occur during hot work operations. This program has been implemented to ensure compliance with OSHA Standard 29 CFR 1910.252 Subpart Q, NFPA standard 51B, and the Fire Code of NY State.

II. PERSONNEL AFFECTED

-Employees and students of SUNY Geneseo
-Contractors working for SUNY Geneseo at all College properties
EXCEPTION: Contractors working under the sole direction of DASNY or SUCF are NOT affected by this policy

III. DEFINITIONS

Combustible Material- Any solid or liquid that will burn.

Flammable Material- Any solid, liquid or gas which is easily ignited and burns rapidly.

Fire Watch- A person who has been trained in general safety, fire safety and in fire extinguisher use and who is involved with hot work operations.

High Energy Hot Work- Tools, equipment or procedures that produce flames or high energy sparks. Examples include: Acetylene gas burning or cutting, electric arc welding or cutting, soldering (torch) and grinding.

Hot Work- Any operations that will generate heat, sparks, or flame. They include, but are not limited to, grinding, soldering, welding, cutting, brazing, chipping, chiseling, sandblasting, etc. Hot work can be defined into two categories: high energy hot work and low energy hot work.

Hot Work Area- The area exposed to the sparks, heat, or flame generated by the hot work operations taking place. This includes the immediate work area as well as areas adjacent to and above and/or below the work area.

Hot Work Permit- The approval given to the responsible person in order to complete the required hot work. No hot work shall be performed until a permit is issued. The permits are granted in written format. Verbal permits will be issued in emergencies.

Low Energy Hot Work- Tools, equipment or procedures that produce moderate heat or low energy sparks. Examples include: chipping, chiseling, using jack hammers, soldering (iron/gun) or sandblasting.

IV. RESPONSIBILITIES

A. Management

SUNY Geneseo shall recognize its responsibility for the safe usage of cutting, heating and welding equipment on its property and:

1. Based on fire potentials, establish approved areas for cutting, heating and welding.
2. Design and implement a Hot Work Permit Program.
3. Designate Permit Authorizing Individuals responsible for authorizing cutting, heating and welding operations in areas not specifically designed or approved for such processes.
4. Ensure that the person welding, cutting, heating and their supervisors are suitably trained in the safe operation of their equipment, the safe use of the process, and emergency procedures in the event of fire.
5. Insist that only approved equipment in satisfactory operating condition be used.
6. Select contractors to perform cutting, welding or heating who have suitably trained personnel and who have an awareness of the magnitude of the risks involved.
7. Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.

B. Supervisors

The supervisor of cutting, welding or heating operations in areas not designed or approved for such processes may be a zone shop or core trades supervisor, or an Assistant Facilities Director or higher, contractor, or other qualified individual. The supervisor shall:

1. Be responsible for the safe handling of the cutting, welding, or heating equipment and for the safety during the cutting, welding, heating process.

2. Determine the combustible materials and hazardous areas present or likely to be present in the work location.
3. Determine the best way to protect combustibles from ignition by the following:

    a) Have the work moved to a location free from dangerous combustibles.
    b) If the work cannot be moved, have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition.
    c) See that cutting, welding, heating are so scheduled that operations that might expose combustibles to ignition are not started during cutting, welding, heating.

4. Determine that the person performing hot work secures approval that conditions are safe before going ahead with cutting, welding or heating.
5. Determine that fire protection and extinguishing equipment are properly located at the site.
6. Where a firewatch is required, see that they are available at the site.
7. Where a firewatch is not required, ensure that employees make a final check-up one-half hour after the completion of cutting, welding, heating operations to detect and extinguish possible smoldering fires.

C. Operations Staff

The person cutting, welding, heating shall handle the equipment safely and use it so as not to endanger lives and property, as follows:

1. Prepare the *Hot Work Area* by removing flammable and combustible materials.
2. Assure that all pertinent items on the Hot Work Permit are completed.
3. Secure authorization for the cutting, welding, or heating from a permit authorizing individual before starting to cut or weld.
4. Cut or weld only when and where conditions are safe so long as conditions are unchanged from those under which permit approval was granted.

No individual who is to perform the actual work is permitted to issue the work permit for that job. That person must obtain the permit from another authorized person.

V. PROCEDURES

A. LOW ENERGY HOT WORK

Low Energy Hot Work such as chipping, chiseling, soldering or jack-hammering does not require a *Hot Work Permit* or *fire watch*. The following procedures shall be used when performing *Low Energy Hot Work:*

1. Operations staff performing the hot work shall inspect the *Hot Work Area* and remove flammable and combustible materials, including empty containers which formerly held flammable liquids and heavy dust build up, at least 10 feet from the work area.
2. For items where removal is impractical, flammables and combustibles must be covered with flame retardant cloth or shielded with fire resistant guards or curtains.
3. Openings or cracks in walls, floors, or ducts within 10 feet of the site shall be tightly covered to prevent the passage of sparks to adjacent areas.
4. Guards shall be utilized to protect the public from flying materials produced during the operation and for arc flash protection.
5. Fully charged and operable 10 pound ABC fire extinguisher shall be available at the work area and the person performing the work trained in its use.
6. Upon completion of the *Low Energy Hot Work*, the individual performing the work shall do a visible inspection of the area looking for flames or smoldering due to the work that was done.

B. HIGH ENERGY HOT WORK/HOT WORK PERMITS

A *Hot Work Permit* shall be issued and a *Firewatch* shall be required for all *High Energy Hot Work* utilizing the following procedures:

1. Utilize the Hot Work Permit checklist found in this program
2. Operations staff performing the *Hot Work* shall inspect the *Hot Work Area* and if feasible remove the work to be performed to an area free of flammable and combustible materials including empty containers which formerly held flammable liquids.
3. If work cannot be moved, remove all flammable and combustible materials including heavy concentrations of dust, from the walls, floors and ceiling within 35 feet of the work area. For items where

removal is impractical, flammables and combustibles must be covered with flame retardant doth or shielded with fire resistant guards or curtains.

4. Openings or cracks in walls, floors, or ducts within 35 feet of the site shall be tightly covered to prevent the passage of sparks to adjacent areas.
5. Where cutting, heating, welding is done near walls, partitions, ceiling, or roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.
6. Cutting, welding, heating on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.
7. A fully charged operable 10 pound ABC fire extinguisher, shall be available at the work area.
8. When welding, heating or cutting is done in close proximity to a sprinkler head, a wet rag shall be laid over the head (or other similar protective method) and then removed at the conclusion of the welding, heating, cutting operation. Special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems.
9. Nearby personnel shall be suitably protected against heat, sparks, slag, and arc flash.
10. After steps 1-9 are completed, have a supervisor review the *Hot Work Area* and *Hot Work Permit* check off list to see that the area is compliant with this procedure. If it is, the supervisor, the *Fire Watch*, and the person performing the hot work shall sign the permit.
11. Upon completion of the hot work, the supervisor or Firewatch will verify that the area was checked for a smoldering fire one ½ hour after completion of hot work.
12. The cancelled permit must be returned to the Environmental Health and Safety (EHS) Department for record retention. If any problems occurred during the *Hot Work*, they must be documented on the *Hot Work permit*.

C. FIRE WATCH

1. During *High Energy Hot Work* activities, the Fire Watch may not have any other duties!
2. The Firewatch shall have fire-extinguishing equipment readily available and be trained in its use. They shall watch for fires in all exposed areas, and try to extinguish them only when obviously within

the capacity of the equipment available, or otherwise they must sound the alarm immediately.

3. A fire watch shall be maintained for at least a half-hour after completion of cutting, heating, welding operations to detect and extinguish smoldering fires.

D. PERMISSIBLE AREAS

Areas on campus where flames, excessive heat and welding are expected are found in the Physics instrument shop, Facilities garage, Heating Plant tool room, CITs A/V shop and the ISC zone shop for maintenance purposes. All other shop work or general maintenance on campus shall have a hot work permit when performing high energy hot work.

E. OTHER PRECAUTIONS

1. Geneseo employees will follow the EHS policy for all personal protective equipment (PPE) needs. Contractors will follow OSHA requirements.
2. Sprinkler protection: Automatic sprinkler protection shall not be turned off while Hot Work is performed. Shields may be used to cover valves as needed for protection but must be removed at the end of each day.
3. Enclosed spaces: For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space (at the cylinder) whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as the lunch period. Overnight and at the change of shifts, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.
4. Drums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.
5. Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built-up pressure during the application of heat.
6. This policy covers external work to buildings including roofing and areas within 35 feet of the building.

VI. REFERENCES

OSHA Standard 29 CFR 1910.252 Subpart Q
New York State Fire Code Chapters 14 Fire Safety During Construction and Demolition and 26 Welding and Other Hot Work
NFPA 51B Fire Prevention During Welding, Cutting, and Other Hot Work

VII. APPENDICES/FORMS

Hot Work Permit

VIII. REVISION HISTORY

Date	Revision No.	Description