Hudson Valley Community College
Hot Work Program and Procedures

PURPOSE

The purpose of this program is to establish safe procedures for conducting Hot Work operations at Hudson Valley Community College (HVCC). Hot Work includes, but is not limited to: welding, brazing, cutting, grinding, soldering, thawing pipe, hot taps, torch-applied roofing and all other similar applications producing a spark, flame, or heat. Hot Work does not include: bunsen burners in laboratories, cooking of food or electric solder irons. Refer to the HVCC Safe Soldering Work Practices for additional information on electric solder iron safety. If you are not sure if an operation is considered Hot Work, contact the Environmental Health and Safety (EHS) Department at 629-7163.

SCOPE

This program applies to all employees, students, visitors and contractors conducting Hot Work operations. All Hot Work must be conducted in Designated Hot Work Areas and/or other locations authorized through the Hot Work Permit process.

All personnel (employees, contractors, building occupants) must be suitably protected against hazards generated by the work (e.g., heat, sparks, fumes, welding radiation, etc.). This may include, but is not limited to, the use of personal protective equipment, shields, screens, or local exhaust ventilation.

DESIGNATED HOT WORK AREAS

To the extent possible, all Hot Work will be conducted in a permanent Designated Hot Work Area having the following features:

- Constructed of noncombustible materials, with all openings or cracks in walls or floors tightly covered to prevent the passage of sparks
- Floors kept clean; noncombustible surface
- No storage of flammable, combustible or other chemical materials within 35 feet
- Adequate ventilation to remove smoke, fumes and odors
- Flammable gases, vapors or liquids are not present
- If present, sprinkler system must be fully operational
- The area will be clearly delineated from other work areas with a sign: CAUTION HOT WORK AREA

Designated Hot Work Areas will be inspected by EHS quarterly to ensure all of these features remain in place.

HOT WORK PERMIT PROCEDURES

Hot Work should not be performed if the work can be avoided or performed in a safer manner. When practical, objects must be moved to a Designated Hot Work Area. If Hot Work is necessary in other areas on a temporary basis, a Hot Work Permit shall be obtained before proceeding. The permit process is designed to prevent fire, prevent injury, and improve overall safety and is required for Hot Work conducted outside officially Designated Hot Work Areas. Permits are issued by a designated Hot Work Permit Administrator in the EHS or Physical Plant Departments.

The following steps shall be followed to obtain a Hot Work Permit and to safely conduct Hot Work:

1. The worker will contact EHS or Physical Plant to obtain a Hot Work Permit.
2. A designated Hot Work Permit Administrator from EHS or Physical Plant shall inspect the area and equipment for fire protection features using the criteria contained in the Hot Work Permit Checklist.
3. A Fire Watch is required for all hot work and an individual must be designated that responsibility on the Hot Work Permit. The Fire Watch duration will be specified on the permit by the Permit Administrator.
4. Fire Monitoring may be required following the conclusion of hot work. The Fire Monitoring methods and duration will be specified on the permit by the Permit Administrator.
5. The Hot Work Permit will not be issued unless all items on the Hot Work Checklist portion of the permit have been adequately addressed.
6. If fire detection in the area must be disabled, the worker must contact Physical Plant (629-7356) or Public Safety (629-7210). Fire detection must be re-activated immediately after the completion of work.
7. Permits for multiple day hot work jobs are permissible and will be noted on the permit. However, the fire detection must be re-activated at the completion of each day's hot work operation.

A Hot Work Permit will not be issued if any of the following conditions exist:

- Sprinkler protection is impaired.
- Appropriate fire-fighting equipment is not readily available.
- Combustible or flammable materials are within 35 feet and cannot be moved or protected.
- Floor and wall openings cannot be covered.
- Cutting or welding on pipes or other metals can conduct enough heat to ignite nearby combustible materials.
- Any condition that could result in undue hazards by performing the work.

All precautions on the Hot Work Permit must be met prior to performing any hot work. The Fire Watch duration and Fire Monitoring methods specified on the permit must be

observed. The Hot Work Permit is valid only for the date(s) and time specified on the permit. For multiple day jobs the workers will review the Hot Work Checklist and re-inspect the hot work area at the beginning of each workshift. A new permit is not necessary for the same job, unless there are significant changes in conditions.
A copy of the permit must remain posted at the hot work location until the hot work is completed and the permit closed. Following the completion of the Hot Work, the Fire Watch and the Fire Monitoring, the permit shall be signed by the Hot Work Operator and returned to EHS.

FIRE WATCH

The individual responsible for the Fire Watch must remain in the area during Hot Work and for a minimum of 30 minutes following the completion of hot work. Their assigned job is to monitor the hot work area and the surrounding area for fire, fire damage or potential for fire. The Fire Watch individual can be given other duties during this time, as long as they do not interfere with their responsibilities outlined here. The Hot Work Permit Administrator will determine the duration of the fire watch and the need for a second fire watch.

Certain construction and occupancy factors lead to a greater risk of fire during Hot Work activities. These higher risk Hot Work activities require a longer fire watch or more than one person. The duration of the Fire Watch will be determined by the individual issuing the Hot Work Permit in consultation with Appendix A of this program, developed from the FM Global Property Loss Prevention Data Sheet 10-3 Hot Work Management.

Certain activities require a second fire watch to be designated. A second fire watch shall be required when ANY of the following conditions exist:

- The hot work area and person performing the hot work are not visible from a single vantage point
- The hot work area is large, multi-level and/or congested
- The Hot Work area extends to the other side of a building assembly due to an opening or thermally-conductive partition.

FIRE MONITORING

After the post-work fire watch has been completed, the hot work area shall be monitored for fire by one of the following methods:

- Automatic smoke detection
- Security video cameras with clear coverage of the hot work area
- Individuals routinely present in the area who have been informed of how to monitor for the start of a fire and how to contact Public Safety in the event a fire or smoke is discovered
- An intermittent patrol of the hotwork area, at a minimum of every 15 minutes

The duration of the fire monitoring period shall be specified by the individual issuing the Hot Work Permit in consultation with Appendix A of this program, developed from FM Global Property Loss Prevention Data Sheet 10-3 Hot Work Management.

EMERGENCY PROCEDURES

Should a fire or signs of a fire occur, the Fire Watch shall immediately contact Public Safety at x7210 or 518-629-7210 to report the fire. Public Safety shall immediately activate the building fire alarm and contact 911 dispatch. The fire watch or other staff in the area may use a fire extinguisher if, in their judgment, it is safe to do so and they know how to use the extinguisher. Anyone serving as a Fire Watch must know how to use a fire extinguisher. However, at no point should any one place their life or safety in jeopardy for a fire.

Factors to consider in using a fire extinguisher:

- First, have you initiated the fire alarm or contacted Public Safety at 629-7210 so that back up help is on its way and others can begin to evacuate?
- Secondly, is there a safe exit behind you, so that if necessary, you can safely get away from the fire?
- Third, is the fire beyond the incipient stage? This means a fire large enough that it cannot be extinguished using one fire extinguisher. If this is the case DO NOT attempt to use a second fire extinguisher; evacuate immediately and ensure that the building alarm has notified all others to evacuate.
- Any fires or use of a fire extinguishers must also be reported to the Environmental Health & Safety Department (518-629-7163) so that the extinguisher can be recharged and the incident reported to the New York State Office of Fire Prevention and Control within 24 hours.

PERMIT CLOSE-OUT

Fire Watch - At the completion of hot work, the designated Fire Watch individual will continue the Fire Watch duties for the duration specified on the Hot Work Permit. At the end of this time period, the Fire Watch individual will thoroughly inspect the work area and the surrounding area for fire, smoldering or other signs of potential fire before leaving the area.

Fire Monitoring - If smoke or heat detection had been de-activated, the worker will notify Public Safety or Physical Plant to re-activate the system. If there is no smoke detection providing coverage of the area, another means of fire monitoring will be used for the duration specified in the Hot Work Permit.

The worker or Fire Watch individual will fill out the Permit Close Out section of the permit, sign and submit it to the EHS Department to be kept on file for three years.

Appendix A – Hot Work Construction and Occupancy Matrix

Hot Work Permit Administrator shall use the matrix below to determine Post-Work Fire Watch and Fire Monitoring Periods and specify on Hot Work Permit. Contact EHS for any questions.

Building Construction Factors							
Occupancy Factors		Non-Combustible Construction (eg concrete, brick)		Combustible Construction without concealed spaces (e.g. open wood frame walls (sheathed on one side), exposed wood joists, beams or trusses or non-FM approved insulated metal panels		Combustible construction with unprotected concealed spaces (e.g. enclosed wood frame walls sheathed on two sides, between ceilings and combustible floor or roof construction)	
		Fire Watch	**Fire Monitor**	**Fire Watch**	**Fire Monitor**	**Fire Watch**	**Fire Monitor**
	Essentially non-combustible with any combustibles contained within closed equipment (e.g. mechanical rooms)	**30 min.**	**0 hours**	**1 hour**	**3 hours**	**1 hour**	**5 hours**
	Office, Classroom and practical lab spaces with limited combustibles	**1 hour**	**1 hour**	**1 hour**	**3 hours**	**1 hour**	**5 hours**
	Offices, shops or labs with significant combustibles (e.g. storage rooms, receiving)	**1 hour**	**2 hours**	**1 hour**	**3 hours**	**1 hour**	**5 hours**
	Shops and Labs and other spaces with oil or chemical use or storage	**1 hour**	**3 hours**	**1 hour**	**3 hours**	**1 hour**	**5 hours**