



**Environmental
Health and
Safety Office**

Hot Work Permit Program

Permitting Process for welding, cutting and brazing.

Adopted: March 6, 2007

Revised: 7/18/16

<http://www.stlawu.edu/environmental-health-and-safety/environmental-health-and-safety-policies>

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Page 1 of 10

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Introduction

Hot work operations include tasks such as welding, brazing, torch cutting, grinding, and torch soldering. These operations create heat, sparks and hot slag that have the potential to ignite flammable and combustible materials in the area surrounding hot work activities. The United States averages 12,630 hot work fires, \$308.9 million in property damages and 31 deaths per year. A single hot work fire can be devastating, as seen in the hot work fire pictured below. The repairs and restoration work associated with this fire resulted in the expenditure of over \$5 million.

Hot work is frequently performed in St. Lawrence University facilities. The university Hot Work Permit Program was developed in accordance with OSHA regulations and NFPA recommendations with the goal of preventing hot work fires.



A Hot Work Operator performing hot work.



Fire caused by hot work

Who's involved in the Hot Work Permit process?

Department Supervisors oversee the Hot Work Permit program for hot work operations under their supervision. Supervisors are responsible for designating employees as Hot Work Operators (HWO), who will perform hot work operations. Any employee who has successfully completed hot work safety training may be a HWO. Hot Work Operators are not allowed to issue their own Hot Work Permits.

A **Permit Authorizing Individual (PAI)** inspects hot work sites prior to the start of hot work operations using the checklist found on the Hot Work Permit form. When a fire watch is required, the PAI will designate an employee to serve as Fire Watch. Once all requirements on the form have been satisfied and the form is signed by a PAI, the document becomes a Hot Work Permit

Page 2 of 10

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and must be posted in the area where hot work is to be performed. Designated PAI's are listed on [Page 7](#).

Hot Work Operators (HWOs) are employees who perform hot work operations. A HWO must always obtain a Hot Work Permit before beginning hot work.

A **Fire Watch** is put into effect to monitor the safety of hot work operations and watch for fires. Fire Watches are assigned by a PAI if the situation requires one, during hot work, and for at least 30 minutes after work has been completed. Any employee who has successfully completed hot work safety training can serve as the Fire Watch. See page 4 for information regarding when a Fire Watch is required.

Cutting and welding operations are restricted to properly trained and authorized individuals only.

Process for obtaining a Hot Work Permit

1. A HWO determines a need for hot work.
2. The HWO ensures the area around hot work activities is in compliance with the safety requirements of the Hot Work Permit.
3. The HWO coordinates with their supervisor who will contact a PAI.
4. The PAI inspects the hot work site and completes the Hot Work Permit Form.
5. The PAI posts a Fire Watch if the situation requires one.
6. Once all permit safety guidelines are satisfied, the PAI signs and posts the permit.
7. The PAI notifies Safety and Security at 5555 where the activity is added to the log book.
8. The HWO can then begin hot work
9. At the end of the job, the PAI sends the expired permit to the Security and Safety Office. This permit will be kept on file for a period of not less than one year. Permit will also be kept on file in EH&S Office for their records.

Safety measures are required by the Hot Work Permit

The 35-Foot Rule

- All flammable and combustible materials within a 35-foot radius of hot work must be removed.
- When flammable and combustible materials within a 35-foot radius of hot work cannot be removed they must be covered with flame retardant tarps and a fire watch must be posted.
- Floors and surfaces within a 35-foot radius of the hot work area must be swept free of combustible dust or debris.
- All openings or cracks in the walls, floors, or ducts that are potential travel passages for sparks, heat and flames must be covered.

Fire Detection and Suppression

- A fire extinguisher rated not less than 2-A:20-B:C must be readily available and accessible.
- Entire building smoke detection and alarms systems cannot be shut down. Instead smoke detectors in the area of hot work may be covered for the duration of hot work to prevent false alarms.
- Automatic sprinkler systems may not be shut down to perform hot work. Instead, individual sprinkler heads in the area of hot work may be covered with a wet rag to prevent accidental activation.
- Specialized suppression systems are in place at Madill Hall, ODY Library, Griffith Art Center and Rifle Range. To avoid accidental operation of system, additional precautions will need to be used when performing hot work at these locations.

Fire Watch

A Fire Watch must be posted by a PAI if the following conditions exist:

- Combustible materials cannot be removed from within a 35-foot radius of the hot work
- Wall or floor openings within a 35-foot radius of hot work expose combustible materials in adjacent areas, including concealed spaces in walls or floors
- Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited.

General Guidelines

- Work should be performed using alternative methods other than hot work whenever possible.
- Hot work should be performed in designated hot work rooms whenever it is practical.
- A Hot Work Permit is valid for one day and one area and must be posted in the area of hot work for the duration of the activity. On multi-day projects, a Hot Work Permit will be needed for each day.
- A copy of every permit shall be filed by the PAI in EH&S office and Safety and Security and kept for a period of at least one year.

Compressed Gas Cylinder Storage and Handling

- Oxygen and fuel gas cylinders must 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 feet apart or separated by a noncombustible wall at least 5 feet 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.

Personal Protective Equipment (PPE)

PPE specifically designed for hot work will be provided to and used by employees performing the hot work in accordance with the Personal Protective Equipment Policy.

<http://www.stlawu.edu/sites/default/files/resource/sluppepolicy>

Hot Work in Confined Spaces

Hot work done in confined spaces requires a Hot Work Permit **and** a Confined Space Entry Permit <http://www.stlawu.edu/environmental-health-and-safety/resource/confined-space>.

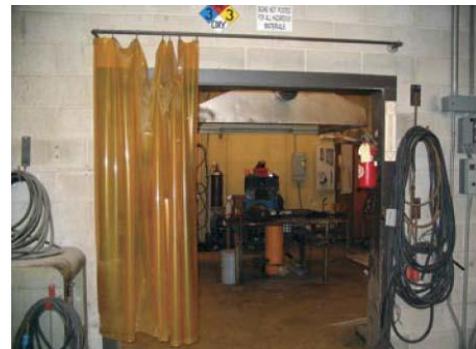
Contact Security and Safety prior to working in any confined space (labeled or otherwise).

When a Hot Work Permit is required

Designated Hot Work Areas (See Page 7 for locations)

A designated hot work area is a permanent location designed for hot work. These areas do not require a permit to perform hot work. For an area to be classified as a designated hot work area, it must meet the following requirements:

- It must be of noncombustible fire-resistive construction, essentially free of combustible and flammable contents.
- It must be suitably segregated from adjacent areas.
- It must be equipped with fire extinguishers.
- It must be inspected and approved annually by EH&S and Facilities Operations.



Designated hot work room

Operations Not Requiring a Hot Work Permit

Operations that produce a flame, sparks, hot slag or enough heat to ignite combustible materials should be considered hot work with a few exceptions. The following operations do not require a Hot Work Permit:

- bunsen burners in laboratories
- fixed grinding wheels
- electric soldering irons

***If you are unsure if an operation is considered hot work, please contact your immediate supervisor.**

Page 5 of 10

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A worker using a fixed grinding wheel

Situations when hot work is not allowed

Non-permissible Hot Work Situations

Hot work is not permitted when the following conditions exist:

- In sprinklered buildings where the entire sprinkler system is impaired.
- When an entire building fire detection system is shut down.
- In the presence of explosive atmospheres, where mixtures of flammable gases, vapors, liquids or dusts may exist.
- In tanks, drums or other containers and equipment that contain or previously contained materials that could create explosive atmospheres.

Required hot work safety training

EH&S Training

Individuals involved in hot work are required to complete hot work training including Supervisors, Permit Authorizing Individuals, Hot Work Operators and Fire Watch personnel. The following EH&S courses must be completed:

- Hot Work Permit Training – Required upon initial assignment and refresher training required every 5 years, conducted by EH&S.
- Fire Extinguisher Training – Required once a year. Hands-on training must be completed initially with Hot Work Permit Training and annually thereafter. This training is currently completed at the annual SLU Safety Day.

Departmental Training

Managers shall train employees on departmental Hot Work Permit procedures and specific safety procedures for the type of hot work equipment used. This training shall be completed upon initial assignment and cover the following subjects:

- Safety procedures specific to the equipment used
- Required personal protective equipment for job tasks
- Identification of Permit Authorizing Individuals and how they can be contacted
- Where to file copies of completed Hot Work Permits
- Locations of designated hot work rooms where a Hot Work Permit is not required

Hot work requirements for contractors

Outside contractors working on the St. Lawrence University campus are required to have Hot Work Safety Procedures as a part of their project safety programs. Contractors working on projects at St. Lawrence University are required to follow their approved Hot Work Safety Plan. Contractors are required to submit their written Hot Work Safety Plan to the Environmental Health & Safety Department for review and approval. This annual review must be completed prior to the contractor starting any hot work.

List of Permit Authorizing Individuals (PAI's)

In-house and Contractor Facilities permits:

**Director of Environmental Health and Safety– Nick Ormasen
Environmental Health and Safety Coordinator – Bill Ritchie**

Academic Program-specific permits:

Assistant Professor of Fine Arts or designee – Amy Hauber

Dedicated Hot Work Areas:

Facilities Operations Plumbing Shop

Facilities Operations Vehicle Maintenance Shop

Barnes Family Sculpture Yard



HOT WORK PERMIT

Page 1 of 2
Environmental Health
& Safety
Phone 229-5303 Fax 229-5807

Date:	Building:
Location:	
Work To Be Done: Abrasive Saw Cut / Grind Heat Tile Solder Welding _____ (type) Other _____	Fumes / Vapors Location of nearest air intake: _____ Type of control in place to prevent spread of fumes/vapors in air intake: _____
Permit Valid: From: _____ To: _____	
Start Time: _____	Completion Time: _____
Hot Work Operator:	Supervisor Name & Cell#:
Department:	Person Responsible for Fire Watch:
Permit Authorizing Individual Authorization:	
Security Acknowledgement:	
Immediately upon completion of work notify Campus Security and Safety - 5555 Hot work before 8 am and after 3:30 pm requires approval 24 hours in advance.	
EMERGENCY 5555 or 911	

HOT WORK PERMIT

Page 2 of 2

The following items are the responsibility of the holder of the Permit.

1. The location where the work is to be done must be inspected by approved Permit Authorizing Individual prior to commencement of work and on completion of work.
 - Sprinkler system, or fire detectors, shall be in service while work is in progress. If systems (whole or partial) must be shut down, notify Security and Safety so a fire watch is initiated.
 - There is no flammable lint, dust, vapors and liquid, or un-purged tanks or equipment previously containing such material in the area.
 - This work is confined to the area or equipment specified in the permit.
 - Floors and surroundings have been swept clean.
2. The following safeguards have been provided:
 - All combustibles have been protected with fire resistant curtains, metal guards or flameproof covers.
 - All floor and wall openings within 35 ft of the operation have been covered.
 - Responsible persons have been assigned to watch for dangerous sparks in the immediate vicinity as well as on the floors above and below.
3. Flame or spark producing equipment to be used has been inspected and found in good repair.
4. Engineering controls must be provided to prevent fumes / vapors from entering air intakes or affecting building occupants.
5. Arrangements have been made for a patrol of the area including floors above and below during any lunch or rest period and for at least 30 minutes after work has been completed.
6. No guy ropes or support lines will be fastened to or passed over sprinkler lines.
7. Hot Work Operator will use adequate fire protection, fire resistant blankets, fire extinguishers and other devices, which may be required by the operation, 10# ABC minimum.
8. Compressed gas cylinders will be secured on approved carriers or holders. Cylinders will always be in upright position.
9. Equipment will be removed upon completion of the job.
10. Proper signs and barriers will be maintained in order to protect life safety.
11. No confined space will be entered without a Confined Space Permit.
12. Fire watch to be reasonable distance to allow for quick response to a problem.
13. OSHA/PESH/NFPA compliance is mandatory.
14. Verify all energy sources have been isolated.
15. Notify Campus Security and Safety upon completion of Hot Work Permit.

EMERGENCY 5555 or 911

Record of Revisions		
Date	Reviewed by	Summary of Revisions
2/23/2015	Suna Stone-McMasters	Updated names on List of Permit Authorizing Individuals.
7/18/2016	Bill Ritchie	Revisions made at recommendation of NYS OFPC