



UNC CHARLOTTE

UNC Charlotte – Hot Work Requirements
(Welding, Cutting, and Brazing)

Environmental Health and Safety Office

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Purpose:

To establish hot work requirements that ensure all hazards are evaluated and the appropriate safety measures and controls are administered prior to and during any process that involves cutting, welding, thermite welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar activity.

Scope:

This program applies to all university personnel and all contractors. Refer to Appendix A for definitions.

Hot Work Responsibilities

Departments are responsible for ensuring that the requirements of this program are understood and followed by their employees. Also Individual departments are responsible for contractors who will be performing hot work activities, as defined, must comply with the requirements of this program.

Specific Departmental Responsibilities:

- A. Contact Building Liaison and appropriate personnel responsible for area in which hot work operations are to take place, inform them of the scope of work to be performed and determine if they have any specific concerns about the operations.
- B. Evaluating the area to determine if combustibles or hazardous materials are present or likely to be present in the work area.
- C. Protection of Combustibles in work Area
 - i. Relocation of work activities to a location free of combustibles.
 - ii. If the work cannot be relocated, have combustibles moved to a safe distance or shielded with metal or fire resistant materials.
 - iii. Rescheduling work activities during a time when combustibles are less likely to be present.
- D. Obtaining a hot work permit from Facilities Management Work Request Hotline (704-687-2155) and proper completion.
- E. Ensure that the hot work area is given a final inspection 30 minutes after completion of hot work activities.
- F. Return completed hot work permits to Facilities Management and notifying Campus Police after final inspection.
- G. Selecting suitable contractors that are trained in the safe operation of their equipment, the safe use of the process, and emergency procedures in the event of a fire.

Environmental Health and Safety Responsibilities (EH&S):

- A. Responsible for developing and maintaining this program to ensure compliance.

- B. Periodic audits of hot work activities.

Fire Watch Responsibilities:

Fire watch shall be required whenever hot work or fire detection system impairment is performed on campus. The fire watch shall be conducted by a trained employee or contractor, but shall not be the actual employee who is performing the hot work operation.

Specific Responsibilities:

- A. Have a fire extinguisher readily available and be trained in its use and limitations.
- B. Be familiar with facilities and procedures for sounding an alarm in the event of a fire.
- C. Aware of inherent hazards of the work site and of any hot work taking place.
- D. Watch for fires in all exposed areas and try to extinguish them only when within the capacity of the equipment available.
- E. Remain at the work area to monitor for smoldering fires while work is in progress and for at least 30 minutes following job completion. If fire watch must leave the work site, all hot work activities must stop.

A fire watch may also be designated to constantly patrol a building area, searching for fire hazards when other means of fire detection are not applicable (mechanical fire alarm system not operations, absence of fire alarm system etc.).

If so, all the above responsibilities apply with the exception of responsibility E. and the establishment of responsibility F.

- F. A fire watch plan (See Appendix C) must be developed outlining specific requirements and forwarded to the EH&S Office.

Hot Work Operator Responsibilities:

- A. The Operator shall be responsible for obtaining, completing, and returning the hot work permit (See Appendix B).
- B. The operator shall be fully qualified to perform required hot work.
- C. The operator shall be responsible for using appropriate safety equipment (eye and face protection, hand protection, etc.) and verifying their equipment and tools are in good working condition.
- D. The operator shall be responsible for stopping hot work activities when condition change from those established when the permit was issued.

Hot Work Requirements:

Permissible Hot Work Areas:

Routine hot work operations shall be allowed without the requirement of a permit only in areas that have been designated as a Safe Hot Work Area. The following list of university locations have been designated as Safe Hot Work Areas:

- A. Smith Building Maintenance Shop
- B. Facilities Management Grounds Maintenance Shop
- C. Cameron Applied Research Center Maintenance Shop
- D. Facilities Management Automotive Shop
- E. Engineering Research Automotive Shop

Permit Required Areas:

Any areas where it is not practical to relocate work to a designated Safe Hot Work Area shall only be permitted once the area is made fire safe by removing or protecting combustibles from the ignition source.

Hot work is prohibited under the following conditions:

- A. Any area outside of a Safe Hot Work Area where a hot work permit has not been obtained.
- B. Near areas where large quantities of flammable or combustible materials can ignite.
- C. In close proximate to an explosive atmospheres.
- D. On any drums, tanks, containers or any vessel that may have contained chemical materials that when heated may produce flammable, explosive, or toxic atmosphere.

Hot Work Permit Procedure:

UNC Charlotte (UNCC) personnel and or contracted personnel engaged in hot work must be authorized to do so by a Qualified UNCC Facilities Management Supervisor, Project Manager, and/or Fire Alarm Technician who understands hot work hazards and what automatic fire detection devices may be affected by the hot work. In the absence of the above contacts, the Environmental Health and EH&S Office will authorize the planned hot work.

1. Request for a HOT WORK PERMIT must be submitted to the Facilities Management Work Request Hotline (704-687-2155) at least 24 hours prior to performing the work. Instructions are noted on the permit. Outside contractors may need assistance from the Project Manager, Facilities Management Supervisor, or the EH&S Office to initiate this action.
2. Hot work permits require that the specific location of the work be identified to assist the HVAC and Fire Alarm departments in determining what

mechanical or alarm systems may be affected. Controls or detection devices may need to be temporarily by passed during hot work and re-activated to avoid unscheduled mechanical system shutdown or fire alarms. A check box reminder for this task is located on the permit. The *Disabled/Re-activated check box must be initialed by a representative of the responsible department before the work is started and after the work is complete.*

3. The HOT WORK PERMIT must be signed by a Qualified UNCC Facilities Management Supervisor or Project Manager authorizing the work. In the absence of both, the EH&S Office shall be authorized to sign off on the permit.
4. Just prior to starting hot work the University Police Dispatcher must be notified at 704-687-2200.
5. The Required Precautions Checklist noted on the Hot Work Permit must be in affect prior to starting the hot work and the permit must be posted in the work area.
6. The university department or contractor requesting the hot work permit is responsible for designating a fire watch.

Appendices

Appendix A - Definitions

- A. Fire Watch – (1) Any trained employee or contractor who is in attendance during the entire hot work operation and are available to extinguish a fire and follow emergency procedures; (2) A fire watch may also be designated to constantly patrol a building area, searching for fire hazards when other means of fire detection are not applicable (mechanical fire alarm system not operations, absence of fire alarm system etc.).
- B. Hot Work – Operations including cutting, welding, thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar activity.
- C. Hot Work Area – The area exposed to sparks, hot slag, radiant heat, or convective heat as a result of the hot work.
- D. Hot Work Equipment – Electric or gas welding or cutting equipment use for hot work.
- E. Hot Work Permit – Permits issued by the responsible person at the facility under the hot work permit program permitting welding or other hot work to be completed in specific locations.
- F. Hot Work Program – A permitted program, carried out by approved facilities-designated personnel, allowing them to oversee and issue permits for hot work conducted by their personnel or at their facility.
- G. Responsible Person – A person trained in the safety and fire safety consideration concerned with hot work. Responsible for reviewing the sites prior to issuing permits as part of the hot work permit program and following up as the job progresses.
- H. Torch –Applied Roof System – Bituminous roofing systems using membranes that are adhered by heating with a torch and melting asphalt back coating instead of mopping hot asphalt for adhesion. Operator - Any employee or contractor who operators and open-flame or spark producing apparatus.

Appendix B - Hot Work Permit

UNC Charlotte HOT WORK PERMIT

**BEFORE INITIATING HOT WORK, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE AN APPROPRIATE FIRE EXTINGUISHER IS READILY AVAILABLE!**

This Hot Work Permit is required for any operation involving open flames or producing heat and/ or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing, and Cadwelding

INSTRUCTIONS

1. Verification below is to be completed by a qualified UNCC employee.
2. The completed original is to be dropped off at the Customer Service Center and copies sent to the EH&S Office and Fire Alarm Technicians.
3. Must be submitted 24 hours before work is started.

HOT WORK BEING DONE BY:

- UNCC Employee _____
- Contractor _____

Date: _____ W.O. # _____
Start Time: _____

Location / Building / Floor _____

Nature of Job / Object _____

Name of Person Doing Hot Work _____

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for work.

Signed: _____

Permit Expires	Date	Time	
			AM PM

Fire Detection Disabled _____ Reactivated _____

Date / Time: _____

Initial: _____

REQUIRED PRECAUTIONS CHECKLIST

- Automatic Fire Detection Disabled?
 - Available sprinklers, hose streams, and/or extinguishers are in service/operable?
 - Hot work equipment is in good repair?
- Requirements within 10 m (35 feet) of work:
- Flammable liquids, dust, lint, and oil deposits removed?
 - Explosive atmosphere in area eliminated?
 - Floors swept clean?
 - Combustible floors wet down, covered with damp sand or fire-resistant sheets?
 - Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins or metal sheets?
 - All wall and floor openings covered?
 - Fire-resistant tarpaulins suspended beneath work?
- Work on walls or ceilings/enclosed equipment:
- Construction is non-combustible and without combustible covering or insulation?
 - Combustibles on other side of walls moved away?
 - Danger exist by condition of heat into another area?
 - Enclosed equipment cleaned of all combustibles?
 - Containers purged of flammable liquids/vapors?
- Fire Watch / Hot Work area monitoring:
- Fire watch will be provided during and for 30 minutes after work, including any coffee or lunch breaks?
 - Fire watch is supplied with suitable extinguishers?
 - Fire watch is trained in use of this equipment and in sounding alarm?
 - Fire watch may be required for adjoining areas, above and below?
 - Monitor hot work area 30 minutes after job is completed.
- Other precautions taken:
- Confined space entry permit required?
 - Area protected with smoke or heat detection?
 - Ample ventilation to remove smoke/vapor from work area?

Lockout/tagout required?

Appendix C - Fire Watch Plan

FIRE WATCH PLAN

While working to complete the _____, _____ has proposed a Fire Alarm Shutdown during working hours. Typical working hours will be _____ to _____. During these hours the following procedure will be conducted:

REQUIREMENTS:

1. Patrol the entire facility a minimum of once per hour for the duration of the shift.
2. Have fire extinguisher, ABC Type, and be trained in its use.
3. Be familiar with facilities for sounding an alarm in the event of a fire.
4. Be aware of the inherent hazards of the work site and of any hot work taking place.
5. Watch for fires in all exposed areas and try to extinguish them only when obviously within the capacity of the equipment available.
6. Provide observation during in accordance with OSHA standard 1910.252 for cutting and welding operations.
- 7. Sound the alarm (air powered horn), and contact Campus Police (704-687-2200) immediately for any size fire or smoke.**

END OF SHIFT ACTIVITIES:

1. _____ will re-energize the Fire Alarm Panel prior to securing the building.
2. Ensure that all corridors and means of egress are free and clear of construction material and debris.

Prior to each shutdown and power-up of the fire alarm panel a _____ supervisor will contact the UNCC Police Department.

ONSITE PERSONNEL IS AS FOLLOWS: