

The University of Chicago Medical Center

POLICY NAME: HOT WORK PRECAUTIONS
POLICY NUMBER: S06-21
ISSUE DATE: MAY 2003
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APPROVED BY: INSTITUTIONAL SAFETY & ENVIRONMENT OF CARE COMMITTEE

PURPOSE

To establish safety procedures for employees, contractors, and subcontractors engaging in any temporary operations involving open flame or producing heat and/or sparks capable of initiating fires or explosions as required by OSHA 29 CFR 1910.252R Welding, Cutting and Brazing and applicable state/local regulations.

POLICY

The University of Chicago Medical Center (UCMC) is committed to providing and maintaining a fire safe environment for patients, visitors and staff. Hot work creates a major fire risk to UCMC buildings, property and occupants if safety precautions are not implemented and maintained during this type of work activity. All employees, contractors or subcontractors performing hot work at UCMC shall obtain a hot work permit prior to commencing hot work activities and strictly adhere to the safety requirements outlined in this policy. Fire watch will be required for all hot work activities performed at UCMC.

SCOPE

This policy applies to the physical environment and associated activities for the following buildings and grounds:

- | | |
|---|--|
| <ul style="list-style-type: none">• Abbott• A.J. Carlson Animal Research Facility• American School• Armour• Billings• Biological Sciences Learning Center (BSLC)• Bob Roberts• Center for Care and Discovery (CCD)• Chicago Lying-In (CLI)• Comer• Comer II• Cummings Life Sciences Center• Drexel Garage• Duchossois Center for Advanced Medicine (DCAM)• Emergency Department• Franklin McLean Memorial Research Institute (FMI) | <ul style="list-style-type: none">• Gilman Smith• Goldblatt Pavilion• Goldblatt Memorial• Hicks-McElwee• Knapp Center For Biological Discovery (KCBD)• Kovler• Mother's Aid Research Pavilion (MARP)• Mitchell• MRI• Parking A• Parking B• Peck• Rubloff• Surgery Brain• Wyler |
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DEFINITIONS

Hot Work – Is work involving any open flame, spark or heat producing activity associated with cutting, welding, grinding soldering, brazing or torch applied roofing that are capable of initiating fires or explosions during construction, renovation, or maintenance work activities.

Fire Watch – A temporary process of physically patrolling in an area that has an impaired fire alarm system, fire sprinkler system or an area where hot work is being performed to observe and correct life safety deficiencies and initiate fire response should a fire occur during the impairment or high risk work activity. Personnel assigned to fire watch cannot be assigned to any other duties.

Hazard Risk Category – Is the classification system used to determine the sources of combustible and/or flammable materials in a work area and the risk of fire if exposed to open flames, sparks or other sources of heat.

RESPONSIBILITIES

Areas of responsibility include, but not limited to, the following:

A. Contractors or Sub-Contractors

1. Conduct an inspection of the work site to verify compliance with safety precautions.
2. Obtain Hot Work Permit for all hot work activities at least 24 hours before commencing hot work.
3. Submit shutdown request to Physical Plant to minimize the risk of nuisance fire alarms.
4. Comply with applicable OSHA standards when performing hot work activities.
5. Provide an approved fire extinguisher at the hot work site.
6. Perform Fire Watch in accordance with S06-24 Fire Watch Policy.
7. Sign off on Hot Work Permit.
8. Document Fire Watch on Hot Work permit.

B. Project Managers

1. Inform contractors to the purpose and intent of the Hot Work Precautions policy.
2. Monitor contractor and sub-contractor compliance with Hot Work Precautions Policy.

C. Physical Plant

1. Inform contractors to the purpose and intent of the Hot Work Precautions policy.
2. Manage hot work request and permit process.
3. Coordinate required fire alarm system impairments necessary for hot work.
4. Maintain electronic documentation of hot work permits process in CMS.

D. Environmental Health and Safety (EHS)

1. Maintain the Hot Work Policy and Procedure.
2. Provide consult on OSHA compliance related to Hot Work procedures.
3. Audit Hot Work Permits for compliance.

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4. Monitor compliance with the Hot Work Precautions Policy.
5. Maintain a hard copy of the hot work permit process.

PROCEDURES

A. Work Site Inspection / Safety Precautions

Prior to the issuance of a Hot Work Permit and beginning hot work the person performing the work shall inspect the work site to verify safety precautions have been addressed and determine the hazard risk category of the area where work is being performed. The work site inspection shall include a compliance verification of, but not limited to, the following:

1. Appropriate fire extinguisher(s) are available and operable at the site of work being performed. Contractors shall provide their own fire extinguishers for hot work;
2. Flammable and ignitable materials and debris have been moved at least 35 feet from the hot work area or covered and protected from the hot work by fire resistant material (e.g. fire blanket) ;
3. Flammable/combustible liquids, compressed gas cylinders, or stored fuel have been moved at least 50 feet from the hot work area or covered and protected from the hot work by fire resistant material;
4. Smoke and fire detectors in the immediate area of the hot work have been temporarily disabled until the hot work is completed. This can only be performed by Physical Plant.
5. Adequate ventilation is provided, especially when cutting or welding material with painted or coated surfaces;
6. Cracks or holes in floors, walls, and ceiling (including ductwork) have been properly covered or plugged;
7. Hot work equipment is operable and in good repair;
8. If working on any drum, barrel or tank, it has been cleaned and purged of flammables and toxics, all tank feeds closed, and the tank vented;
9. Persons performing the work and conducting the fire watch know how to use a fire extinguisher and have been briefed on UCMC fire response procedures.
10. Equipment and supplies are stored in a manner that prevents hazardous conditions.
11. The work site area has been evaluated to determine the hazard risk category and fire watch duration required post hot work activities.

B. Hot Work Permit

Hot work should be avoided whenever possible by considering alternative methods. An alternative method of conducting the work shall always be considered such as bolting or riveting rather than welding or **cold cutting** rather than using a cutting torch. When practical, objects to be welded, cut, or heated should be moved to a designated safe location (e.g., maintenance shops).

If hot work must be performed, a hot work permit must be obtained from the Shutdown Coordinator or designee at least 48 hours prior to the start of any hot work activity:

1. Hot Work Permits are obtained by the person performing the hot work from the Shutdown Coordinator located in the Physical Plant Sign Shop in the basement of Gilman Smith Room W-025. All permit requests for hot work will be in person.

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2. The Shutdown Coordinator or designee fills out the required information on the right side on Part 1 of the permit. The following information is required:
 - a. Hot Work By, Employee or Contractor
 - b. Date
 - c. Job Number
 - d. Work to be Performed
 - e. Name of Person Performing the Hot Work
 - f. Name of Person Performing the Fire Watch
3. The Person performing the work checks the applicable safety precautions and hazard risk category on the right side of Part 1 and signs Part 1 to certify that they have inspected the area and all required safety precautions have been implemented.
4. The Shutdown Coordinator or designee will review to verify permit is complete, and sign the permit to authorize the work. The expiration date and time on the permit. Permits are only valid for one day.
5. The Shutdown Coordinator or designee will provide the bottom copy or Part 2 of the Hot Work Permit to the person performing the work.
6. The bottom copy or Part 2 of the Hot Work Permit will be conspicuously posted at the work site prior to beginning work by the person performing the work and shall remain posted for the duration of the hot work activity.
7. Prior to the start of hot work activity the person performing the work will write the start time on Part 2 of the Hot Work Permit.
8. After hot work activity and the required fire watch has been completed, the person performing work will document the finish time of hot work activity on Part 2 of the Hot Work Permit.
9. The person performing the fire watch will document the time for each check on Part 2 of the Hot Work Permit.
10. At the end of the required fire watch the person performing the work will take Part of the Hot Work Permit to the Physical Plant Command Center. This process should be completed within 30 minutes after completing the Fire Watch.
11. The Physical Plant Command Center will write the date, time, and sign the Hot Work permit to verify receipt.

B. Fire Watch

1. When Is Fire Watch Required – Hot Work

A constant fire watch is required for a minimum of thirty (30) minute at the completion of all hot work activities. The person performing the work will be responsible inspecting the work site prior to starting hot work to determine the hazard risk category of the work site. The hazard risk category will determine the required length of time for the fire watch. The hazard risk category shall be documented on the Hot Work Permit by the person performing the work. Hazard risk categories include the following:

- a. Low Risk Area (30 minute Watch Required):
 - Non-combustible building construction;

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- Combustible building materials and contents are more than 35 feet from hot work;
 - Walls, open railing and floor openings that could expose combustible materials in adjacent areas are more than 35 feet from hot work;
 - Combustible materials, such as, supply storage, trash, and landscaping materials are more than 35 feet from hot work; and
 - Flammable or combustible liquid or gas storage/usage is more than 100 feet from the hot work.
- b. Medium Risk Area (1 Hour Watch Required):
- Combustible building construction;
 - Combustible building materials and contents less than 35 feet from hot work;
 - Walls, open railing and floor openings that could expose combustible materials in adjacent areas less than 35 feet from hot work;
 - Combustible materials, such as, supply storage, trash, and landscaping materials are than less than 35 feet from hot work;
 - Flammable/combustible liquids, compressed gas cylinders, or stored fuel is more than 50 feet from the hot work.
- c. High Risk Area (2 Hour Watch Required):
- Flammable/combustible liquids, compressed gas cylinders, or stored fuel is less than 50 feet from the hot work; or
 - Torch applied roofing activities.

If personnel performing hot work activities have any questions about the location or the risk category the Environmental Health and Safety Department should be consulted prior to starting any hot work activity.

2. Fire Watch Procedure – Hot Work

The following procedures will be implemented at the completion of all hot work activities:

- a. After completion of the Hot Work activity the hot work site shall be constantly under watch for the first 30 minutes from the time Hot Work has stopped. The 30 minute constant watch requires the person performing the watch to never leave the worksite and will include checks for signs of fire, looking in areas that may be hidden or covered up, floors below the work site, and in openings like pipes or shafts.
- b. If the hot work activity is located in an area classified as a medium or high risk, the proceeding watch shall include a series of quick check(s) conducted every 30 minutes after the constant watch has been completed for the duration specified for the area type. The quick check(s) will include checks for signs of fire, looking in areas that may be hidden or covered up, floors below the work site, and in openings like pipes or shafts.

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- c. If smoke and/or fire is identified during the fire watch, **Rescue** anyone in immediate danger, **Alarm/Activate** the nearest manual fire alarm pull station, Call 773-702-6262 to report the location of the fire, **Contain** the smoke/fire by closing all doors in the area, **Extinguish** the fire if this can be done safely with a portable fire extinguisher and **Evacuate** the area.
- d. The Fire Watch will be documented on the Post-Hot Work Fire Watch section located on the back side of the Hot Work Permit.
- e. The name, date and time shall be documented in this section for each Fire Watch time period as required for the type of hazard area.
- f. The Hot Work Permit will be turned in at the end of the Fire Watch to the Physical Plant Command Center. The Physical Plant Command Center will sign the permit and indicate the date and time received.
- g. The completed Hot Work Permits will be maintained by Physical Plant Command Center.
- h. EHS will review and audit compliance with this process.

C. Prohibited Hot Work Areas

Hot work shall not be permitted in the following areas until the conditions prohibiting hot work have been modified:

1. Areas where both the fire alarm system and sprinkler system is impaired or not functioning.
2. In the presence of explosive atmospheres, or in situations where explosive atmospheres may develop inside contaminated or improperly prepared tanks or equipment which previously contained flammable liquids;
3. In areas with an accumulation of combustible debris, dust, lint, and oily deposits;
4. In areas near the storage of exposed, readily ignitable materials such as combustibles;
5. On a container such as a barrel, drum, or tank that contained materials that will emit toxic fumes when heated;
6. In a confined space, until the space has been inspected and determined to be safe.

E. Protective Equipment

Persons performing welding activities shall be equipped with the following protective devices:

1. Portable and/or mechanical ventilation capable of keeping the levels of fumes, dust, and gases below the thresholds established in the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PELs). If local exhaust or general ventilation are not available and fume, dust, and gas generation is high, respirators shall be used;
2. Gloves, apron, and/or jacket that are made of a material that is an insulator from heat and electricity;
3. Welders helmets equipped with proper filter plate and cover lenses;
4. Respiratory protection. *Note: Employees are required to satisfy the requirements of the Respiratory Protection Program before being issued or wearing a respiratory;*
5. Screens to protect persons not properly protected from the visual effects of viewing arc welding or cutting and during gas or oxygen cutting or welding;
6. Lifelines and harnesses for work in confined spaces as set forth in the Confined Space Program.

F. Injuries/Exposures

If during the performance of assigned duties the employee becomes injured or suspects an occupational exposure occurred, such situations shall be reported in accordance with the A06-01 Worker Related Injury, Illness, and Exposure Reporting policy.

PERFORMANCE MONITORING / EVALUATION

The performance and effectiveness of management plans and supporting safety policies are monitored by the Institutional Safety and Environment of Care Committee. Key Performance Indicators (KPIs) using measurable values are established to identify opportunities to improve or demonstrate the effectiveness of maintaining or reaching a desired target. Responsible managers collect and evaluate data for KPIs and report associated data to the Institutional Safety and Environment of Care Committee on quarterly basis via a scorecard reporting system. The KPIs are monitored over time and plans, policies and programs are adjusted as needed to improve the KPIs in support of the Environment of Care Program's strategic goals.

Contractors not following this policy shall be immediately dismissed from working at UCMC. Non-compliance of this policy by UCMC employees is subject to disciplinary action.

POLICY REVIEW / REVISIONS

The Institutional Safety and Environment of Care Committee shall review this policy at least every three years or as needed to improve process and/or comply with applicable regulatory requirements.

APPENDICIES

Appendix A – Hot Work Permit

REFERENCES

S06-23 Fire Alarm and Sprinkler System Impairments
S06-24 Fire Watch
Contractors Safety Handbook
OSHA 1910.252 Cutting, Welding and Brazing
FM Global Hot works System
NFPA 51B

Marco Capicchioni
Vice President, Facilities Planning, Design and Construction

Sharon O'Keefe
President

Part 1 HOT WORK PERMIT

6613693

This permit is required for any temporary operation involving open flame or producing heat and/or sparks: welding, cutting, brazing, grinding, soldering, or using a torch to thaw piping or heat material. The permit applies to only this job, in the area specified, during the time and date noted.

Instructions for Permit Approver:

1. Permit Approver fills out **Part 1** and keeps for file.
2. Person performing work checks applicable safety precautions and hazard risk category for fire watch duration on **Part 1**.
3. Person performing work signs safety certification on **Part 1**.
4. Issue **Part 2** to the person performing work.
5. Verify dates/times are recorded for work and fire watch when **Part 2** is returned.
6. Sign Final Check for permit closure on **Part 2**.

Required Safety Precautions:

Person performing the hot work has inspected the area and taken the following safety precautions:

YES NA Utility Systems

- Sprinkler protection in service and operable.
- Smoke detectors in immediate area have been temporarily disabled.
- Ventilation system has been isolated.

Requirements Within 35 Feet Of Work

- Flammable liquids and combustible materials removed from area.
- Combustibles moved away from opposite side of adjacent structures.
- Wall and floor openings covered.
- Floors swept and dust, lint and debris cleaned from overhead structure.
- Walkways protected beneath hot work.

Work In Confined Spaces

- Adequate ventilation provided.
- Atmosphere checked with gas detector.
- Thoroughly cleaned and removed all flammables or combustibles.
- Purged containers of flammable liquids/vapors.

Emergency Response

- Person performing work knows UCMC fire response procedure.
- Appropriate fire extinguisher located at the work site.
- Person performing work knows how to use a fire extinguisher.

EHS Requirements

- Additional EHS precautionary measures taken.

Fire Watch Requirements

Hazard Risk Category for work site:

- Low Risk Area (30 Minute Continuous Watch)
- Medium Risk Area (1 Hour Fire Watch)
- High Risk Area (2 Hour Fire Watch)

I hereby certify that the applicable required safety precautions specified above have been implemented.

HOT WORK PERFORMED BY	
<input type="checkbox"/> UCMC Employee	<input type="checkbox"/> Contractor
DATE	PROJECT#
BUILDING	FLOOR
ROOM #	CMS#
WORK TO BE PERFORMED	
NAME OF PERSON PERFORMING WORK (Print)	
NAME OF PERSON PERFORMING FIRE WATCH (Print)	
Permission is authorized by Physical Plant to perform only the work specified above.	
PERMIT APPROVER (Signature)	
THIS PERMIT EXPIRES (One Shift Time Limit)	
DATE:	TIME: AM PM



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PERSON PERFORMING WORK (Signature)

Part 2

CAUTION

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HOT WORK IN PROGRESS

Instructions for Permit Approver:

1. Permit Approver fills out **Part 1** and keeps for file.
2. Person performing work checks applicable safety precautions and hazard risk category for fire watch duration on **Part 1**.
3. Person performing work signs acknowledgement on **Part 1**.
4. Issue **Part 2** to the person performing work.
5. Verify dates/times are recorded for work and fire watch when **Part 2** is returned.
6. Sign Final Check for permit closure on **Part 2**.

Required Safety Precautions:

Person performing the hot work has inspected the area and taken the following safety precautions:

YES NA Utility Systems

- Sprinkler protection in service and operable.
- Smoke detectors in immediate area have been temporarily disabled.
- Ventilation system has been isolated.

Requirements Within 35 Feet Of Work

- Flammable liquids and combustible materials removed from area.
- Combustibles moved away from opposite side of adjacent structures.
- Wall and floor openings covered.
- Floors swept and dust, lint and debris cleaned from overhead structure.
- Walkways protected beneath hot work.

Work In Confined Spaces

- Adequate ventilation provided.
- Atmosphere checked with gas detector.
- Thoroughly cleaned and removed all flammables or combustibles.
- Purged containers of flammable liquids/vapors.

Emergency Response

- Person performing work knows UCMC fire response procedure.
- Appropriate fire extinguisher located at the work site.
- Person performing work knows how to use a fire extinguisher.

EHS Requirements

- Additional EHS precautionary measures taken.

Fire Watch Requirements

Hazard Risk Category for work site:

- Low Risk Area (30 Minute Continuous Watch)
- Medium Risk Area (1 Hour Fire Watch)
- High Risk Area (2 Hour Fire Watch)

I hereby acknowledge that the above safety precautions have been

HOT WORK PERFORMED BY

- UCMC Employee Contractor

DATE PROJECT#

BUILDING FLOOR

ROOM # CMS#

WORK TO BE PERFORMED

NAME OF PERSON PERFORMING WORK (Print)

NAME OF PERSON PERFORMING FIRE WATCH (Print)

Permission is authorized by Physical Plant to perform only the work specified above.

PERMIT APPROVER (Signature)

THIS PERMIT EXPIRES (One Shift Time Limit)

DATE: TIME: AM PM

Hot Work:

START TIME: AM PM
FINISH TIME: AM PM

Fire Watch:

End of 30 MIN TIME: AM PM
End of 1st HR TIME: AM PM
End of 2nd HR TIME: AM PM

FINAL CHECK TIME: AM PM

PERSON PERFORMING WORK (Signature)

CAUTION



HOT WORK IN PROGRESS

In Case Of Emergency

Rescue – Remove anyone in immediate danger

Alarm – Pull fire alarm and call **773-702-6262**

Contain – Close all doors to the area

Extinguish – Use extinguisher to extinguish fire

Relocate – Evacuate area of danger



AT THE FOREFRONT

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