



Hot Work Permit Program

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**I. Introduction:**

- A. Burns, eye injury, fires and explosions are the primary risks associated with hot work. Hot work is work involving burning, welding, or a similar operation that is capable of initiating fires or explosions. These operations create heat, sparks, and hot slag that have the potential to ignite flammable and combustible materials in the areas surrounding hot work activities. In an effort to minimize harm to the University of Wyoming (UW) employees, students, visitors and property, this program outlines the basic requirements for conducting hot work safely.

II. Purpose:

- A. The purpose of this document is to outline minimum procedures, training, equipment, and work practices that if followed, will help prevent accidents to UW employees, students, visitors and property. It also achieves compliance with the Occupational Safety and Health Administration's OSHA 29CFR 1910.252 (*Welding, Cutting and Brazing* regulation) and NFPA 51B.

III. Scope:

- A. This document applies to all personnel at UW, Laramie campus, regional campuses, and related facilities and operations. It includes all activities involving hot work defined in the next section.

IV. Policy:

- A. It is the priority of the University of Wyoming to provide an accident-free and healthful environment for its employees by eliminating recognized hazards in the workplace. RMSO has primary responsibility for the development of required safety policies and programs. All employees must abide by the established safety policy and rules and attend all required safety training. This program has been developed with these priorities in mind, mainly, to keep University employees protected from hazards associated with hot work. The University also demonstrates its willingness to comply with recognized safety and health standards and regulations.

V. Definitions:

- A. Designated Area

A location designed for, or approved by a competent person (i.e., RMSO safety specialist or designated supervisor) for hot work operations to be performed regularly (e.g., Physical Plant Welding Shop). Hot work in designated areas does not require a permit.



B. Designated Supervisor

Acts as a Permit Authorizing Individual. It must be an individual who is knowledgeable of the hot work activities. This person may be the hot work operator's supervisor or an individual of equivalent or higher status.

C. Fire Watch

Ensures safe conditions are maintained at the hot work site. Has received training on the hot work permit program and fire extinguishers.

D. Hot Work

Work involving burning, welding, or a similar operation that is capable of initiating fires or explosions.

E. Hot Work Permit

A document signed by the designated supervisor for the purpose of authorizing a specified hot work activity (See Appendix A).

F. Hot Work Operator

A trained individual authorized by the designated supervisor to perform hot work.

VI. Responsibilities

A. University (The Employer)

1. Ensure the safety of its employees and comply with all applicable requirements of state and federal regulations.
2. Provide support and resources for the implementation of the hot work permit program including tools, training, and personal protective equipment (PPE).

B. Risk Management and Safety (RMSO)

1. Maintain the written hot work permit program, monitor the program, and revise the program as necessary with input from stakeholders.
2. Provide training and consultation as necessary.
3. Investigate and document reported accidents or incidents that are related to hot work.
4. Review and revise the program on a periodic basis.

C. Department Head/Director

1. Designate supervisors to implement hot work requirements and processes.
2. Ensure all employees engaged in hot work are properly trained and understand the hot work permit program requirements and processes.
3. Designate areas established for hot work activities where the potential fire danger is limited.

D. Designated Supervisor

1. Implement all provisions of the hot work permit program for work areas under their control.
2. Ensure the precautions listed on the hot work permit are understood by the Hot Work Operator and Fire Watch.
3. Ensure that there is sufficient local ventilation provided to minimize exposure to smoke and fumes.
4. Select appropriate PPE for their employees.
5. Review and sign written hot work permits
6. Ensure that a Fire Watch is assigned when required by the hot work permit.
7. File completed hot work permits and provide copies to RMSO.

E. Hot Work Operator

1. Attend and successfully complete all required hot work and fire extinguisher training.
2. Maintain hot work equipment in safe operating condition.
3. Obtain written approval from a designated supervisor before hot work begins.
4. Use appropriate PPE while performing hot work (e.g., eye protection, gloves, welding jackets)
5. Post the approved hot work permit and warning signs (See Appendices A and B) at the work location.
6. Cease hot work operations if unsafe conditions develop.



7. Contact supervisor if conditions become unsafe or warrant reassessment during the hot work task.
8. Return the completed hot work permit to the designated supervisor.

F. Fire Watch

1. Attend and successfully complete all required hot work and fire extinguisher training.
2. Notify other personnel in the area of the hot work operations.
3. Ensure that safe conditions are maintained during the hot work.
4. Have fire-extinguishing equipment readily available and be trained in its use.
5. Extinguish fires when they are obviously within the capacity of the available fire extinguisher. If a fire is beyond the capacity of the equipment, immediately sound the fire alarm, evacuate the area and call 911.
6. Maintain a fire watch for at least 30 minutes after the hot work is completed.
7. Use all appropriate PPE.

G. Facility Engineering and Facilities Planning Project Manager

1. Inform other employers (i.e., contractors) working in the vicinity of UW hot work operations of the hazards and necessary precautions.
2. Coordinate hot work operations with the contractor, when both University personnel and contract employees will be working in or near a hot work area.

VII. Personal Protective Equipment

1. Any employee performing hot work shall wear appropriate PPE. This shall include eye protection (i.e., goggles, welding helmets, face shields and/or safety glasses) and fire resistant clothing (i.e., non-synthetic clothing, welding jacket, leather gauntlet gloves).

VIII. Hot Work Procedures

A. Pre-Work (for non-designated areas)

1. Contact Physical Plant or a property manager to isolate the HVAC system for interior work and to locate intake vents on the exterior of the building.



2. Inspect the hot work area, identify potential hazards and control those hazards. All flammables and combustibles within a 35 foot radius must be moved to a safe distance or shielded.
3. Cover all penetrations in walls, ceilings and floors within a 35-foot radius of the hot work. Protect combustible floors (i.e., wood) by wetting them down or covering them with a non-combustible drop cloth.
4. Place non-combustible or flame-resistant screens so personnel in adjacent areas are protected from arc flash, heat, flames, and welding slag.
5. Complete a hot work permit. Obtain authorization from a Designated Supervisor and post the permit at the work site.
6. Post warning signs in the area to warn nearby personnel of the hot work. An example of this warning is in Appendix B.
7. Fully charged and operable fire extinguishers shall be available immediately at the work area. These extinguishers shall be supplied by the group performing the hot work. The fire extinguishers normally located in a building are not considered to fulfill this requirement.
8. Silence the fire alarm and, if necessary, cover sprinkler heads and smoke detectors in the immediate hot work area with wet rags or other non-combustible materials so they will not be triggered during the work.
9. Conduct air monitoring if necessary.

B. During Hot Work

1. Maintain a fire watch in close proximity to the hot work for the duration of the job plus 30 minutes after completion of work.
2. Place welding hoses so that they will not be crushed or damaged. Always remove hoses from confined space when on break or lunch.
3. Conduct air monitoring if necessary.

C. Post Work

1. Maintain a fire watch for at least 30 minutes after the hot work is completed.
2. Ensure fire extinguishing equipment is accessible throughout the entire durations of the fire watch.



3. Reactivate the fire alarm and remove all covers from sprinkler heads and smoke detectors upon completion of the hot work.
4. Complete the appropriate sections of the hot work permit and return it to the designated supervisor.

IX. Prohibitive Practices during Hot Work

A. If any of the below conditions exist, stop work and contact your supervisor:

1. The area fire suppression system (e.g., sprinkler, halon) is inoperable.
2. The area has potential to contain an atmosphere of explosive gases, vapors, or dusts (e.g., confined spaces, containers).
3. There are containers or tanks where flammable, liquids, solids, or vapors may be present within 35 feet of hot work.
4. There are pipes that are in contact with combustible walls, ceilings, roofs, or partitions where heat conduction can cause ignition.
5. Surfaces may contain lead, asbestos, or other materials that could give off toxic fumes, vapors, or dusts.

X. Training

- ### A. Hot work permit and fire watch training shall be made available to all UW employees associated directly with hot work operations including supervisors and managers. This training shall be done:
1. Before the employee is first assigned duties under this program.
 2. Whenever there is a change in hot work operations that presents a new hazard.
 3. Whenever the supervising department has reason to believe either that there are deviations from hot work procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
- ### B. This training will be comprised of an initial in-classroom session including a test of proficiency at the end. Topics to be covered include:
1. Review of UW Hot Work Program
 2. Types of hot work
 3. Hazards
 4. Lower Explosive Limit (LEL) and Upper Explosive Limit (UEL)



5. Monitoring for combustible atmosphere
 6. Welding on containers or tanks that have contained flammable/toxic materials
 7. Hot work permit procedures
 8. Personal protective equipment
 9. Recordkeeping
- C. RMSO will assist individuals interested in being trainers for this class. RMSO will provide training materials.

XI. Recordkeeping

- A. All hot work permits shall be returned to the designated supervisor and a copy sent to RMSO. Permits must be maintained for a minimum of one year by the department. Periodically, the permits should be reviewed to determine program effectiveness.
- B. Training records will be tracked using the UW Human Resource Management System (HRMS). Reports are available for RMSO training upon request.
- C. Periodically, supervisors shall perform an internal review of their hot-work operations (Refer to Appendix C).

XII. Standards

- A. OSHA 29CFR 1910.252 *Welding, Cutting and Brazing*
- B. ANSI Z 49.1-2005 *Safety in Welding, Cutting and Allied Processes*
- C. *NFPA 51B: Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, 2009 edition*



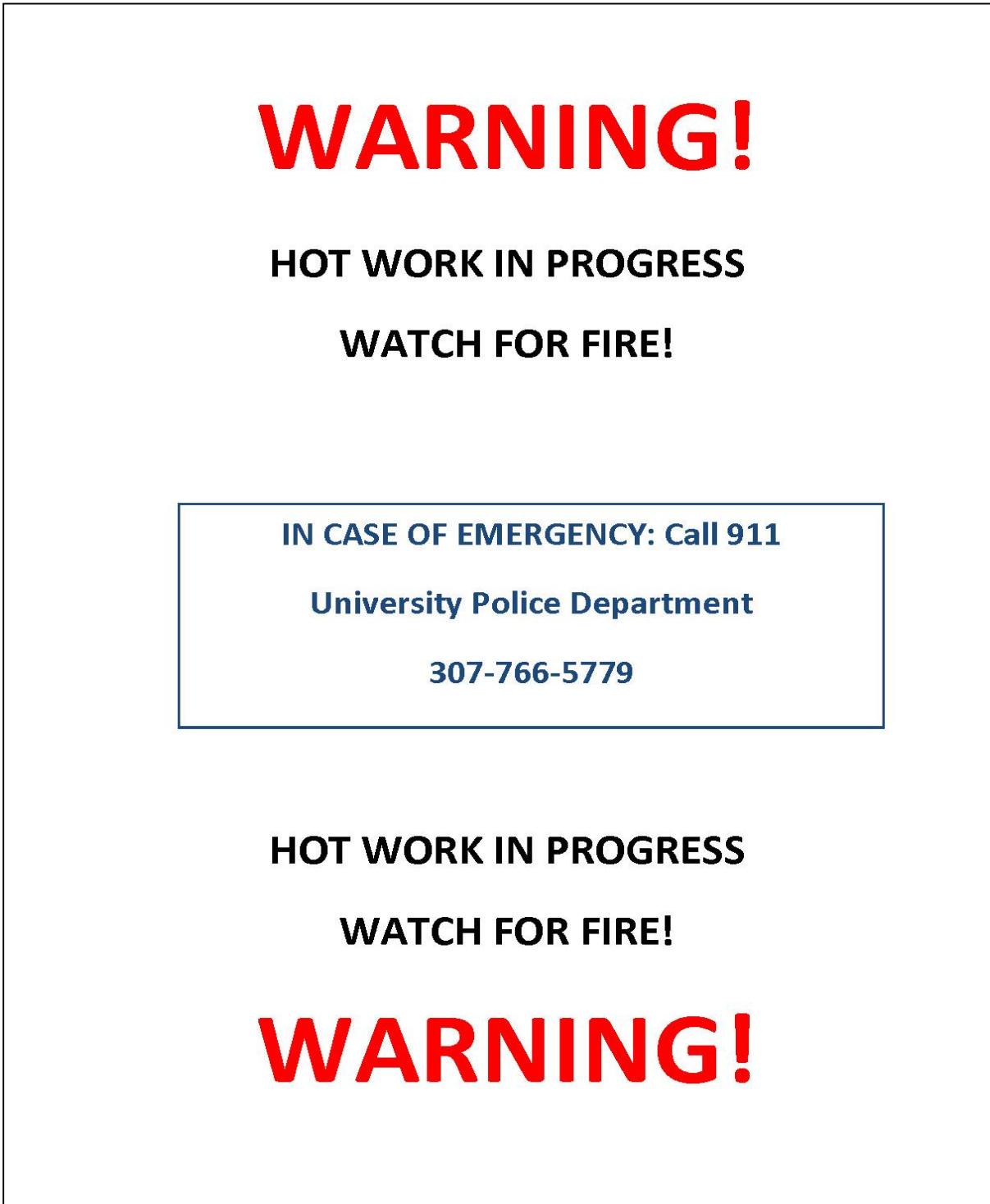
Appendix A: HOT WORK PERMIT

A hot work permit is required for any operation involving open flames or producing heat and/or sparks outside of a designated hot work area. It must be authorized by a Designated Supervisor and posted at the hot work site. File the finished permit in your department and send a copy to RMSO (Wyoming Hall, Room 102), Phone: (307) 766-3277, Fax: (307) 766-6116.

If the required precautions cannot be satisfied, hot work is not permitted.

Inspection Date:	Work Order # (if applicable):
Location (building, floor, room #):	Name(s) and department(s) of Hot Work Operator(s):
Description of hot work and special precautions:	
Authorization	
This permit is valid for the pre-designated time period listed below and only so long as safe work conditions exist. It expires on any change in condition that adversely affects safety in work area. Multi-day permits require a safety walkthrough at least once a day.	
Designated Supervisor Name (print) : _____ Signature: _____	
Start Date and Time: _____ Expiration Date and Time: _____	
Precautions Checklist	
General	
YES NO N/A	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Hot work operator, Fire Watch, and Designated Supervisor are familiar with the UW Hot Work Program.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Hot work equipment is in good working condition.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Workers are fitted with appropriate safety equipment.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Hot work area is adequately ventilated.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Workers know the locations of the fire alarm and firefighting equipment.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fire detection and/or sprinkler system is in service.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fire alarm has been silenced.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Hot work permit and warning sign are posted on site.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Other potentially affected persons (i.e., contractors, occupants) have been notified.
Requirements within 35 ft. (11m) of work	
YES NO N/A	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Combustibles and flammables within 35 feet of work are removed or protected with approved shielding.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Floor and wall openings are covered or sealed with non-combustible material.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Duct and conveyor systems are shielded, shut down or both.
Work near walls or ceilings	
YES NO N/A	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Construction is noncombustible and without combustible covering or insulation.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Combustibles adjacent to walls (on both sides) are removed.
Work on and near containers and equipment	
YES NO N/A	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Enclosed equipment cleaned of all combustibles.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Containers purged of flammable liquids and vapors combustible gas monitoring performed.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fume hoods cleared by RMSO.
Final inspection (to be performed after work is completed)	
YES NO N/A	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Fire alarm was reactivated.
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Hot work area was inspected 30 minutes after hot work was completed.

Appendix B: Hot Work Operations Warning Sign



Appendix C: Hot Work Program Review Checklist

Department/Building/Shop _____ Date _____

Designated Supervisor _____ Review Performed by _____

A. General	Y	N	N/A	COMMENTS
1. Welding and cutting operations restricted to authorized employees				
2. Designated hot work areas are fire safe				
3. Hot work permits used for hot work outside of designated areas				
4. Fire watch used in permit areas				
5. Sufficient listed or approved fire resistant shields (i.e., curtains, blankets, pads) are available				
6. Appropriate fire extinguishers provided in vicinity of hot work				
7. Building sprinkler systems operational				
8. Local or general exhaust ventilation adequate				
9. Appropriate personal protective equipment provided and used				
10. Air monitoring performed when explosive or toxic air contaminants are potentially present				
11. Recordkeeping is up to date				
12. Hot work equipment is in good working condition				
B. Confined Spaces	Y	N	N/A	COMMENTS
1. Safe procedures followed for hot work in confined spaces				
2. Ventilation and/or respiratory protection provided and used				
3. Welding cylinders and cutting equipment left outside confined space				
4. Electrodes removed from holders and/or gas supply shut off when operations are suspended for any substantial period (i.e., lunch)				
5. Air monitoring performed				
C. Compressed Gas Cylinders	Y	N	N/A	COMMENTS
1. Oxygen and fuel gas cylinders segregated (i.e., 20 feet apart or 5 foot fire wall) while in storage with protective valve caps in place				
2. Regulators compatible with gas cylinder				
3. Cylinder carts used for transport				
4. Cylinders secured				
5. Empty or unused gas cylinders safely stored and returned to supplier.				

D. Training	Y	N	N/A	COMMENTS
1. Workers trained in use of welding and cutting equipment, material hazards, and UW Hot Work program.				
2. Personal protective equipment training provided				
3. Confined space entry training provided				
4. Fire extinguisher training received within 1 year				

Appendix D: Hot Work Permit Process

