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# Hot Work Permit

The University of North Carolina at Greensboro

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## UNCG Hot Work Program

### Hot Work Program Definitions:

**Hot Work:** Work involving cutting, burning, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems, or any similar activity or operation that is capable of initiating fires or explosions.

**Permit Authorizing Individual (PAI):** The individual designated by management to authorize hot work.

**Designated Area:** A permanent location designed or approved for hot work operations (e.g., foundry) that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas.

**Permit-Required Area:** An area that is made fire safe by removing or protecting combustibles from ignition sources.

### Responsibility for Hot Work:

Management, contractors, the PAI, the fire watch personnel, and the operators shall recognize their mutual responsibility for safety in hot work operations as well as compliance with this program.

#### Management:

- Management or a designated agent shall be responsible for the safe operations of hot work activities.
- Management shall establish permissible areas for hot work.
- Management shall designate a PAI.
- All equipment shall be examined to ensure it is in a safe operating condition.
- When found to be incapable of reliable safe operation, the equipment shall be repaired by qualified personnel prior to its next use or be withdrawn from service and tagged out of service.
- Management shall ensure that only approved apparatus, such as torches, manifolds, regulators or pressure reducing valves, and acetylene generators, are used.
- Management shall ensure that all individuals involved in hot work operations, including contractors, are familiar with the provisions of this program, NFPA 51B, OSHA 1910.252, and OSHA 1926.350.

- Individuals involved in hot work operations shall be trained in the safe operation of their equipment and in the safe use of the process.
- Individuals involved in hot work operations shall have awareness of the inherent risks involved and understand the emergency procedures in the event of a fire.
- Management shall advise all contractors about site-specific flammable materials, hazardous processes or conditions, or other potential fire hazards.

**Permit Authorizing Individual (PAI):**

- In conjunction with management, the PAI shall be responsible for the safe operation of hot work activities.
- PAI shall:
  - Consider the safety of the hot work operator and fire watch with respect to personal protective equipment for other special hazards beyond hot work.
  - Determine site-specific flammable materials, hazardous processes, or other potential fire hazards that are present or likely to be present in the work location.
  - Ensure the protection of combustibles from ignition by the following means:
    1. Consider alternative methods to hot work.
    2. Move the work to a location that is free from combustibles.
    3. If the work cannot be moved, moving the combustibles to a safe distance or having the combustibles properly shielded against ignition.
    4. Schedule hot work so that operations that could expose combustibles to ignition are not begun during hot work operations.

**\*NOTE: If either item 2, 3, or 4 cannot be met, hot work shall not be performed.**

- Determine that fire protection and extinguishing equipment are properly located at the site.
- When required, ensure a fire watch is at the site.
- When a fire watch is not required, make a final check ½ hour after the completion of hot work operations to detect and extinguish smoldering fires.
- Complete the Hot Work Permit form and ensure it is maintained on the work site until the final fire watch is complete.
- Maintain a record of all completed Hot Work Permits.

**Hot Work Operator:**

- Shall have the PAI's approval before starting hot work operations.
- Shall examine all equipment to ensure it is in a safe operating condition; if found to be incapable of reliable safe operation, the equipment shall be repaired by qualified personnel prior to its next use or be withdrawn from service
- Shall cease hot work operations if unsafe conditions develop and shall notify management and / or the PAI for reassessment of the situation.
- Maintain the Hot Work Permit on the work site until the final fire watch is complete.

**Fire Watch Personnel:**

- Shall be trained to understand the inherent hazards of the work site and of the hot work.
- Shall ensure that safe conditions are maintained during hot work operations.
- Shall have the authority to stop the hot work operations if unsafe conditions develop.

- Shall have fire-extinguishing equipment readily available and shall be trained in its use.
- Shall be familiar with the facilities and procedures for sounding an alarm in the event of a fire.
- Shall watch for fires in all exposed areas and try to extinguish them only when the fires are obviously within the capacity of the equipment available. If not, then sound the alarm immediately.
- Shall be permitted to perform additional tasks, but those tasks shall not distract him / her from their fire watch responsibilities.

**Contractors:**

- Before starting any hot work, contractors and their clients shall discuss the planned project completely, including the type of hot work to be conducted and the hazards in the area with the UNCG Project Manager.
- Obtain the Hot Work Permit form from the Project Manager.
- Maintain the Hot Work Permit on the work site until the final fire watch is completed and the Project Manager has signed off on the form.

**Fire Prevention Precautions:**

**Non-permissible Areas:**

Hot work shall not be permitted in the following areas:

1. In areas not authorized by management.
2. In sprinklered buildings where the sprinklers are impaired, unless the requirements of NFPA 25 are met.
3. In the presence of explosive atmospheres (i.e., where mixtures of flammable gases, vapors, liquids, or dusts with air exist).
4. In the presence of uncleaned or improperly prepared equipment, drums, tanks, or other containers that have previously contained materials that could develop explosive atmospheres.
5. In areas with an accumulation of combustible dusts that could develop explosive atmospheres.

**Personal Protective Clothing:**

Clothing shall be selected to minimize the potential for ignition, burning, trapping hot sparks, and electric shock.

**Hot Work Permit Requirements:**

1. The hot work equipment to be used shall be in satisfactory operating condition and in good repair.
2. Where combustible materials, such as paper clippings, wood shavings, or textile fibers, are on the floor, the floor shall be swept clean for a radius of 35 ft, and the following criteria also shall be met:
  - a. Combustible floors shall be kept wet, covered with damp sand, or protected by a listed or approved welding blanket, welding pad, or equivalent.

- b. Where floors have been wet down, personnel operating arc welding equipment or cutting equipment shall be protected from possible shock.
3. All combustibles shall be relocated at least 35 ft in all directions from the work site, and the following criteria also shall be met:
  - a. If relocation is impractical, combustibles shall be protected by a listed or approved welding curtain, welding blanket, welding pad, or equivalent.
  - b. To prevent the entrance of sparks, the edges of covers at the floor shall be tight, including at the point at which several covers overlap where a large pile is being protected.
4. Openings or cracks in walls, floors, or ducts within 35 ft of the site shall be covered or sealed with listed or approved fire-rated or noncombustible material to prevent the passage of sparks to adjacent areas.
5. Ducts and conveyor systems that might carry sparks to distant combustibles shall be shielded, shut down, or both.
6. If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, they shall be protected by a listed or approved welding curtain, welding blanket, welding pad, or equivalent.
7. If hot work is done on one side of a wall, partition, ceiling, or roof, one of the following criteria shall be met:
  - a. Precautions shall be taken to prevent ignition of combustibles on the other side by relocating the combustibles.
  - b. If it is impractical to relocate combustibles, a fire watch shall be provided on the side opposite from where the work is being performed.
8. Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.
9. Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles shall not be undertaken if the work is close enough to cause ignition by conduction.
10. Floors shall be kept clean.
11. Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area.
12. If existing hose lines are located within the hot work area defined by the permit, they shall be connected and ready for service but shall not be required to be unrolled or charged.
13. The following shall apply to hot work done in close proximity to a sprinkler head:
  - a. A wet rag shall be laid over the sprinkler head and then removed at the conclusion of the welding or cutting operation.
  - b. During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems.
14. The operator and nearby personnel shall be suitably protected against dangers such as heat, sparks, and slag.
15. In instances where the scope of work and the tools used to conduct hot work result in possible travel of slag, sparks, spatter, or similar mobile sources of ignition farther than 35 ft, the PAI shall be permitted to extend the distances and areas addressed in Item 2 above.

16. In instances where the scope of work and tools used to conduct hot work are known to be incapable of generating slag, sparks, spatter, or similar mobile sources of ignition capable of leaving the immediate area of the applied hot work, the PAI shall be permitted to do the following:
  - a. Reduce the distances and areas addressed in Item 2 and Item 4 above to distances and areas that he or she considers fire safe for the intended operation.
  - b. Describe those distances and areas on the hot work permit.

**Fire Watch for Hot Work:**

A fire watch shall be required by the PAI when hot work is performed in a location where other than a minor fire might develop or where the following conditions exist:

1. Combustible materials in building construction or contents are closer than 35 ft to the point of operation.
2. Combustible materials are more than 35 ft away from the point of operation but are easily ignited by sparks.
3. Wall or floor openings within a 35 ft radius expose combustible materials in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials are adjacent to the opposite side of partitions, walls, ceilings, or roofs and are likely to be ignited.

A fire watch shall be maintained for at least 30 minutes after completions of hot work operations in order to detect and extinguish smoldering fires. The duration of the fire watch shall be extended if the PERMIT AUTHORIZING INDIVIDUAL determines the fire hazards warrant the extension. More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by the initial fire watch.