

COLUMBIA UNIVERSITY

ENVIRONMENTAL HEALTH & SAFETY

HOT WORK PERMIT PROCEDURES

COLUMBIA UNIVERSITY
MEDICAL CENTER

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HOT WORK PERMIT PROCEDURES

A. PURPOSE:

This program establishes the minimum safe working procedures and guidelines for the operation cutting, welding, brazing, grinding and soldering or any other similar operation throughout the Columbia University Medical Center. It also covers the control of ignition sources such as spark-producing tools and devices in hazardous areas. The program meets the basic requirements of the New York City Fire Department and federal regulations.

B. SCOPE:

These procedures are intended to protect life, health and property from fire and the products of combustion, which might result from the use of welding and cutting equipment, open flames and ignition sources. All employees of Columbia University Medical Center and outside contractors/sellers/service companies involved in the use of flame or spark-producing equipment on CUMC premises are required to conform to these guidelines.

C. POLICIES AND PROCEDURES:

It is the policy at CUMC that a Hot Work Permit shall be issued by the Facilities Operations before conducting any operation involving welding or cutting, or use of flame or spark-producing equipment in the areas not specifically designated for such use. Facilities Operations shall be notified in writing by the Project Manager or Contractor Supervisor at least 48 hours in advance of intended torch operation. A copy of these Hot Work Procedures shall be provided to the contractor at time of notification. The Hot Work Permit shall be valid for the day and the operation for which it is issued. Jobs requiring more than one day shall require a separate permit for each day's work.

When means other than gas or electric arc cutting or welding could provide equal or superior work quality, the least hazardous means of performing the job should be used.

In order to obtain a Hot Work Permit:

1. Torch operator must have a valid *Certificate of Fitness (COF)* from the New York City Fire Department for "Torch Use of Flammable Gases for Cutting and Welding" (G-95).
2. A Fire Guard/Fire Watch* must also be present and have a valid *Certificate of Fitness (COF)* from the New York City Fire Department for "Fire Guard for Field Construction sites/Fire Guard for Torch Operations (F-93)
3. Contractors must supply their own approved fire extinguisher, minimum 2-A:20-B:C rating (one 2½ gallon pressurized extinguisher or one 10 lb. ABC dry chemical extinguisher). The contractor shall also provide proper personal protective equipment including applicable safety precautions, signage, barricades, etc.

* A qualified Fire Guard/Fire Watch Person - holding a valid NYFD Certificate of Fitness, shall be on a continuous duty during torch operations. This person shall inspect the exposed areas to ensure the safety of the operation. *The Fire Watch Person shall have proper fire extinguishing equipment and be trained in its use. Fire extinguisher shall be readily accessible within 30 ft. of location where hot work is performed. S/he shall inspect the area initially, at one-half hour after completion of work, followed-up by another inspection at one-half hour later, for the purpose of detecting fire. This person shall complete the final report and send a copy to Facilities Operations.*

Facilities Operations shall develop appropriate standard operating procedures when required. They shall designate areas where a "standing" Hot Work Permit shall be in effect. These areas should be controlled by the Facilities Operations, and may include mechanical spaces, metal shops, and heating plants. Designated areas should be free of combustible materials, including stored materials and construction material components. A standing permit shall not be in effect in any areas where gaseous fuels, hazardous vapors and fumes from liquid fuels or other flammable/combustible liquids and gases may be present or there is a potential for accumulation.

When welding and cutting is to be done in a location not designated for such purpose, e.g., stairwell, inspection and authorization by the Facilities Operations Supervisor shall be required before such an operation begins. When necessary, EH&S should be consulted. In confined spaces or other such hazardous areas, use of gas and electric arc welding or cutting equipment shall not be permitted until the Facilities Operations Supervisor has inspected the area. EH&S shall be consulted, if necessary. A separate confined space entry permit may be needed, when necessary.

D. LIMITATIONS:

A Hot Work Permit will be issued with the understanding that the contractor shall **NOT** perform such activities when:

- CUMC Facilities Management has not authorized to perform torch work in a given area.
- A qualified Fire Guard/Fire Watch person (COF holder) is not assigned during operation.
- Sprinkler protection is impaired.
- Appropriate fire extinguisher equipment is not readily available.
- Explosive, flammable or other hazardous vapors, gases or dusts may be present in the area.
- There is a potential for heat transfer along or through walls, pipes, tanks or other metal surfaces that may cause ignition or decomposition of ignitable or toxic substances in contact with the metal.
- There is potential for production of sparks, slag or molten metal by welding or cutting within 35 feet of unprotected combustible or flammable substances that may cause fire.
- The area is a confined space area without proper ventilation and if the operation could result in the accumulation of smoke and hazardous gases in that space.
- The person issuing the permit or the employee performing the work believes that the issuing of a permit would or could result in undue hazards of any nature.
Proper signs and placards are not placed to inform people in the area.
- Proper engineering controls are not in place to prevent exposure to fumes of adjacent area occupants.
- Proper barriers are not in place to prevent people inadvertently entering into the area.

Whenever a question arises pertaining to the advisability of issuing a permit to any party involved, work shall **NOT** begin until the Facilities Operations Supervisor has completed an on-site inspection and has concluded it is safe to proceed.

E. OUTSIDE CONTRACTORS:

All contractors involved in the use of flame or spark producing equipment at Columbia University Medical Center must have a copy of the Hot Work Permit and the signage posted when

working. Before starting work they must ensure to the Facilities Operations that they have trained personnel and qualified Fire Guards/Fire Watch Person on premises. The contractor must adhere to all applicable New York City Fire Department, Federal regulations and CUMC policy, and obtain the required city permits, when necessary, for such work. A copy of the contractor's written Hot Work Permit Procedures shall be available for EH&S review.

F. FIRE SAFETY REQUIREMENTS (As per Section 2604 of FDNY Fire Code)

Separation from combustibles.

Hot work areas shall not be less than 35 feet from combustible materials and combustible waste or shall be provided with appropriate shielding to prevent sparks, slag or heat from igniting exposed combustibles.

Openings.

Openings or cracks in walls, floors, ducts or shafts within 35 feet of the hot work area shall be tightly covered (with non-combustible materials or sealed) to prevent the passage of sparks to adjacent combustible areas, or shielded by metal fire-resistant guards, or provided with curtains to prevent passage of sparks or slag.

Housekeeping.

Combustible waste shall not be allowed to accumulate on floors and other surfaces within the hot work area. Contractors working in hot work permitted areas must regularly clean and lawfully dispose of combustible waste.

Partitions.

Partitions segregating hot work areas from other areas of the building shall be of noncombustible construction. Partitions shall prevent the passage of sparks, slag, and heat from the hot work area.

Precautions in hot work.

Hot work shall not be performed on a container or equipment that contains or has contained flammable liquids, gases or solids until the container or equipment has been thoroughly cleaned, inerted or purged; except that "hot tapping" shall be allowed at bulk plants and terminals on tanks and piping when such work is conducted by competent personnel. Hot work involving cutting, welding or heating of any flammable solid in any form shall be conducted only with the approval of the commissioner.

Sprinkler protection.

Sprinkler system protection shall not be shut off or impaired while hot work is performed unless approved by the CUMC Facility Management or EH&S (Fire Safety). Where hot work is performed close to sprinklers, noncombustible barriers or damp cloth guards shall shield the individual sprinkler heads and shall be removed when the work is completed. If the work extends over several days, the shields shall be removed at the end of each workday.

Construction sites and torch-applied roof systems.

A Fire Guard shall be provided for each torch operation at a construction site and in connection with torch applied roofing system operations. A Fire Guard shall be provided for each torch in operation. An additional Fire Guard shall be provided on the floor or level below the torch operation

Fire detection systems.

Approved special precautions shall be taken to avoid accidental operation of automatic fire detection systems. (See: Notice For Shut-Down of Fire Protection Systems)

G. PRE-HOT WORK CHECK

A pre-hot work check shall be conducted by the responsible person prior to work to ensure that all equipment is safe and hazards are recognized and protected. A report of the check shall be kept at the work site during the work and made available for inspection. The pre-hot work check shall be conducted at least once per day and shall verify the following:

1. Fire Guard personnel are present.
2. All persons performing hot work possess certificates of fitness.
3. Portable fire extinguishers are operable and available.
4. The hot work equipment is in good working order.
5. The hot work area is clear of combustibles and flammable solids or that such materials present in the area at a distance of 35 feet.
6. Exposed construction is of noncombustible materials or, if combustible, is protected.
7. Openings are protected.
8. Hot work area floors are clear of combustible waste accumulation.
9. Approved actions have been taken to prevent accidental activation of extinguishing and detection equipment in accordance with "Notice of Shutdown Procedures"

H. HOT WORK PERMIT:

The attached Hot Work Permit form shall be completed signed by the Facilities Operations Supervisor and the contractor. A signed copy shall be posted near the work site. Hot Work Permits will be maintained by Facilities Management for 48 hours from date of permit.