

# Permit Program for Hot Work

#FE-13

Effective Date: 06/30/05

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## 1.0 Purpose

Seton Hall University (SH) recognizes that there is a potential for injury to people and damage to property that can result from fire or sparks that arises when hot work is performed outside of a designated safe hot work area. This operating guideline establishes a permit authorization system to ensure that all hazards are evaluated and that appropriate safety measures and controls are taken prior to and during any operation that uses a heat generating, open-flame or spark-producing apparatus.

This operating procedure is written in accordance with the Occupational Safety and Health Administration's (OSHA) workplace standard, 29 CFR 1910.252, Welding, Cutting and Brazing and the National Fire Protection Association (NFPA) code standard 51B, Fire Prevention in Use of Cutting and Welding Processes.

## 2.0 Scope

This operating procedure shall apply to all Seton Hall personnel and all contract personnel working at all University-owned properties.

## 3.0 Definitions

**3.1 Designated Safe Hot Work Area**—areas that have been designed and constructed for performing open-flame or spark-producing work.

**3.2 Final Checkup**—personnel who will occasionally monitor the hot work area for 3 hours after the fire watch has been completed, to detect and extinguish any smoldering fires that may be identified, or take other effective action if needed.

**3.3 Fire Watch**—personnel who are in attendance during the entire hot work operation and are immediately available to extinguish a fire or take other effective action if needed.

**3.4 Hot Work**—any work using a heat generating, open-flame or spark-producing apparatus. Hot work includes, but is not limited to, welding, cutting, burning, grinding, and any related heat-producing jobs that could ignite combustible materials or flammable atmospheres.

**3.5 Hot Work Supervisor**—the Seton Hall employee who signs the hot work permit.

**3.6 Hot Work Manager**—the Seton Hall employee responsible for the hot work program.

**3.7 Hot Work Operator**—any employee or contractor who operates a heat generating, open-flame or spark-producing apparatus or performs any hot work as defined in 3.4.

**3.8 Hot Work Permit** - A special permit issued by the Hot Work Supervisor which authorizes specified hot work at a specific location and time. (See Appendix A.)

**3.9 Late Issue Hot Work Permit** – Any Hot Work Permit Issued after 1:30 PM Monday thru Friday, or any permit issued on a weekend or holiday.

## **4.0 Responsibilities for Hot Work**

**4.1 Departments**—are responsible for ensuring that the requirements of this operating procedure are understood and practiced by its employees. Ensuring that an outside contractor who will be performing any hot work, as defined, will comply with the requirements of this guideline. Specific responsibilities of the department conducting or coordinating any hot work operations include:

- a. Contact Facilities Engineering, coordinate with them on the scope of work to be performed and determine if they have any specific concerns about the procedure.
- b. Determine the combustible materials and hazardous areas present or likely to be present in the work location.
- c. Protect combustibles in the work location by:
  - i. moving the work to a designated safe hot work area or a location free of combustibles;

- ii. if the work cannot be moved, have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition; or
  - iii. schedule the hot work during a time when the combustibles are not likely to be in the area.
- d. Obtain a HOT WORK PERMIT from the Hot Work Supervisor for any work that is to be performed outside of a designated safe hot work area.
- e. Ensure that workers are provided with and using proper safety equipment, including personal protective equipment and fire extinguishing equipment.
- f. When required, designate a responsible person to serve as a fire watch.
- g. Ensure that the work area is monitored continually for one hour after completion of the job to detect and extinguish possible hot spots or smoldering fires.

**4.2 Hot Work Manager**— The Facilities Engineering Safety Coordinator is responsible for the development and maintenance of this operating guideline, providing resources for equipment and personnel training, and for auditing all operations to ensure compliance to this procedure. Specific responsibilities include:

- a. Review and approve, in coordination with a facilities engineering representative, locations approved for hot work operations (designated safe hot work areas).
- b. Maintain a list of designated areas.
- c. Periodically inspect designated areas to be sure that conditions have not become unsafe for welding and/or cutting.
- d. Provide training for fire watch, final check, and ensure that the proper fire fighting equipment is in working condition, and is available to standby personnel.

**4.3 Hot Work Supervisor**—is responsible for the daily operation of this guideline. Specific responsibilities include:

- a. Issue a HOT WORK PERMIT for the work being done outside of the designated safe work area, after the area has been inspected and approved.
- b. Ensure that the fire watch procedure will be completed
- c. Ensure that the final checkup procedure will be completed by one of the following, the outside contractor, Facilities Engineering or Public Safety & Security.
- d. Ensure that part 1A of the permit is delivered to the administrative offices of Public Safety & Security, in their absence deliver to the on duty dispatchers.
- e. Notifying Public Safety & Security by 1:30 pm of the current open permits, and request they perform the final checkup on them,

- f. Mark any late issue permits with the words LATE ISSUE, and hand deliver them to Public Safety & Security. Notify them that this is a late issue permit and that the final checkup should be completed.
- g. Notifying Public Safety & Security when a final checkup has been completed by the outside contractor or Facilities Engineering.
- h. Completing the previous day permits
- i. Suspending hot work if conditions become unsafe for the work being preformed.

**4.4 Final Check**—a final check shall be required whenever hot work is performed at any location on campus other than designated safe hot work area. The final check shall be performed by Public Safety and Security, Facilities Engineering, or any employee or contractor designated by the Hot Work Supervisor. Specific responsibilities include:

- a. Occasionally monitor the Hot Work area for smoldering fires for 3 hours after the fire watch has been completed. This monitoring can be accomplished thru a properly arrange automatic central station smoke detection system where available.
- b. Having fire extinguishing equipment readily available and be trained in its proper use and limitations.
- c. Being familiar with facilities and procedures for sounding an alarm in the event of a fire.
- d. Attempt to extinguish fires appropriate to the available equipment and level of training, or otherwise activate the fire alarm system.
- e. Notify the Hot Work Supervisor and Public Safety & Security that the final check has been completed.

**4.5 Fire Watch**—a fire watch shall be required whenever hot work is performed at any location on campus other than designated safe hot work area. The fire watch shall be any employee or contractor designated by the Hot Work Supervisor. Specific responsibilities include:

- a. Having fire extinguishing equipment readily available and be trained in its proper use and limitations.
- b. Being familiar with facilities and procedures for sounding an alarm in the event of a fire.
- c. Correcting or stopping any conditions which may lead to a fire and reporting conditions to the Hot Work Supervisor at the earliest opportunity. Attempting to extinguish fires appropriate to the available equipment and level of training, or otherwise activate the fire alarm system.
- d. Remain at the work site to monitor for smoldering fires while work is in progress and for at least sixty (60) minutes following job completion.
- e. Sign the Hot Work permit in the designated space.

- f. Remove any covered fire detector head, or call Public Safety & Security to restore the system after hot work has been completed.

**4.6 Hot Work Operators**—shall obtain proper authorization to perform hot work operations via the HOT WORK PERMIT and shall handle the equipment safely and use it so as not to endanger lives and property. The operator is also responsible for:

- a. Ensuring full compliance with the requirements of this procedure.
- b. Be fully qualified to perform required hot work and verify that their equipment and tools are in good working order.
- c. Using appropriate safety equipment, including eye and face protection, hand protection, body protection, head protection, hearing protection and respiratory protection, as needed.
- d. Avoid welding or cutting operations where conditions ARE NOT SAFE.
- e. Stop work when conditions change from those set when work was approved.
- f. Ensure the fire watch has started.
- g. Ensure part 2 of the Hot Work Permit is left at the job site in plain view for the final checkup procedure.

## 5.0 Hot Work Requirements

**5.1 Permissible 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. For the purpose of this operating procedure the following campus areas are designated as SAFE HOT WORK AREAS:

| Building Name | Specified Locations |
|---------------|---------------------|
|               |                     |
|               |                     |
|               |                     |
|               |                     |

**5.2 Permit-Required Areas**—in areas where it is not practical to move the work to a designated SAFE HOT WORK AREA, hot work shall only be permitted once the area is made fire safe by removing combustibles or protecting combustibles from ignition sources.

Hot work operations are strictly prohibited under the following conditions:

- a. In areas not designated as SAFE HOT WORK AREAS where a proper hot work permit has not been obtained;
- b. In sprinklered buildings while such protection is impaired;

- c. In the presence of explosive atmospheres, such as mixtures of flammable gases, vapors, liquids, or dusts with air; On or in any drum, container or vessel that has not been properly cleaned to remove any possible explosive atmospheres that can develop inside from residual contents; or
- d. In areas near the storage of large quantities of flammable or combustible materials that can readily ignite.

## **6.0 Hot Work Permit Procedures**

**6.1 Preparation of work area**—before a hot work permit is approved and issued, the Hot Work Supervisor shall verify that:

- a. All welding and cutting equipment to be used is in satisfactory condition and in good repair.
- b. Any combustible materials such as paper clippings, wood shavings or textile fibers on the floor are swept clear for a radius of 35 ft. Floors constructed of combustible materials are properly protected by either wetting the surface or covered by fire-resistant shields. Where floors have been wetted down, personnel operating arc welding or cutting equipment shall be protected from possible shock.
- c. All combustible materials are relocated at least 35 ft horizontally from the work area. Where relocation is not practical, the combustible materials shall be protected with flame-proof covers or otherwise shielded with metal or fire-resistant shields or tarps.
- d. Openings or cracks in walls, floors or ducts within 35 ft of the work area are tightly covered to prevent the passage of sparks to adjacent areas. Where hot work is done near walls, partitions, ceilings or roofs of combustible construction, fire-resistant shields or guards are provided to prevent ignition.
- e. If hot work is to be done on a metal wall, partition, ceiling or roof, that precautions are taken to prevent ignition of combustible materials on the other side, due to conduction or radiation, such as relocation or covering the materials. If the combustible materials can not be relocated or protected, a fire watch shall be provided on the opposite side of the wall where the work is being performed.
- f. No hot work is attempted on a metal partition, wall ceiling or roof having a covering, or on walls or partitions of combustible sandwich-type panel construction.
- g. Hot work is not undertaken on pipes or other metals that are in contact with combustible walls, partitions, ceilings or roofs, if the work is close enough to cause ignition by conduction.
- h. Nearby personnel are suitably protected against heat, sparks, slag, etc.
- i. Where hot work is to be done in close proximity to a sprinkler head, that the head is covered by a wet cloth to prevent activation. The cloth must be removed immediately at the conclusion of the hot work.

**6.2 Designation of Fire Watch**—the hot work supervisor is responsible for designating a fire watch. The fire watch shall:

- a. Have fire extinguishing equipment readily available and be trained in its use.
- b. Know how to activate the building's fire alarm system, if applicable, or who to notify in the event of a fire.
- c. Watch for fires in all exposed areas, and try to extinguish them first only when obviously within the capacity of the equipment available, or otherwise sound the alarm immediately.
- d. Monitor the work area for at least 1 hour after completion of the hot work to detect and extinguish any smoldering fires that may be identified.
- e. Sign off on the Hot Work Permit in the designated space.
- f. Notify the Hot Work Supervisor that the fire watch has been completed.

**6.3 Designation of Final Checkup**—the hot work supervisor is responsible for designating a final checkup. The final checkup shall:

- a. Have fire extinguishing equipment readily available and be trained in its use.
- b. Know how to activate the building's fire alarm system, if applicable, or who to notify in the event of a fire.
- c. Watch for smoldering fires in all hot work exposed areas, and try to extinguish them first only when obviously within the capacity of the equipment available, or otherwise sound the alarm immediately.
- d. Occasionally monitor the work area (at least hourly) for 3 hours after completion of the fire watch to detect and extinguish any smoldering fires that may be identified.
- e. Sign off on the Hot Work Permit in the designated space, and return to Facilities Engineering or Public Safety and Security.

**6.4 Notification and Approval** - Once the work area has been properly prepared the department or individual requesting the hot work permit shall complete the hot work permit form (see Appendix A) and contact the hot work supervisor for final review and approval. The hot work supervisor shall:

- a. Review the permit request and verify that all necessary precautions have been properly taken. If necessary, a visual inspection may be conducted prior to final approval.
- b. Call Public Safety & Security to verify that the buildings fire sprinkler system is operational, where applicable. Determine if the work area has any fire alarm detectors that need to be disabled to prevent false alarms, and cover the effected detectors, or request the Associate Director of Safety and Security Systems or his designee to disable only those devices that could be accidentally activated.

- c. Verify the location, start time and duration of the hot work operation. A hot work shall only be valid for the time duration identified. No hot work permit shall exceed an 8-hour period. If additional time is needed, the requester must notify the Hot Work Supervisor for issuance of a new permit.
- d. Once approved, the permit shall be posted at the work area, in plain view for the duration of the job.

## **7.0 Special Precautions**

**7.1 Work Stoppage** -- - When work is stopped for an extended period of time the equipment must be shut down and secured to prevent accidental sparking. If the work stoppage will exceed the original duration time of the hot work permit, the requester must notify Facilities Engineering to request issuance of a new permit.

**7.2 Confined Spaces**—any hot work that is to be performed in a confined space shall be conducted in accordance with the University Operating Procedure, FE-23, Confined Space Entry Guideline Program.

**7.3 Welding or Cutting on Containers** -- - No cutting, welding, or other hot work is to be performed on any drums, tanks, containers or any vessel that may have contained chemicals or materials that when heated may produce flammable, explosive or toxic atmospheres if the container has not been thoroughly cleaned and prepared.

**7.4 Hot Tapping** -- - Hot work that must be performed on any utility piping used for the transmission or distribution of flammable gases or liquids shall only be performed by a crew qualified to make hot taps.

**7.5 Outside Contractors** -- - Contractors shall perform all hot work procedures in accordance with this operating procedure or be able to demonstrate that they have a comparable procedure that meets or exceeds the requirements of this operating procedure.

## **8.0 Personal Protective Equipment**

Personal protective equipment for eyes, face, head, and extremities, respiratory protection and protective shields and barriers, shall be used and maintained in a sanitary and reliable condition. Selection of appropriate devices should be made in accordance with the University Operating Guideline, FE-26, Personal Protective Equipment. Outside contractors are required to provide their own protective equipment and shields, and no University equipment or tools are to be loaned to outside contractors

## **9.0 Appendices**

Appendix A -- Hot Work Permit Form is required and must be obtained in person at the Facilities Engineering building. Ant questions please contact Ext 9454.