MINNESOTA STATE
Northeast Higher Education District

HOT WORK PROGRAM

July 2017

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Hot Work Program

Section 1. Introduction

Hot work is defined as welding, cutting, hot riveting, grinding, chipping, soldering, and other activities that produce sparks or use flame. The portability of the equipment and its improper use, outside areas specifically designated and authorized for safe use, can increase the likelihood of fires that could potentially cause injury, facility damage, and interrupt the institution's mission.

MnSCU's Hot Work program, issued on April 15, 2002, was used as a reference in developing this program. The OSHA standards largely involved with hot work include Welding, Cutting, and Brazing (General Requirements), 29 CFR 1910.252, and Machinery and Machine Guarding (Abrasive Wheel Machinery), 29 CFR 1910.215.

While welding, cutting, and other hot work operations are common and useful maintenance, construction, modification, or production methods, they introduce hazards that must be controlled. The principal hazard associated with portable hot work equipment is the introduction of unauthorized ignition sources into random areas of a facility. Heat sufficient to start fires or ignite combustible and/or explosive materials may come from a number of sources, including the following examples:

- The open flame of a torch.
- Metals being welded or cut.
- Molten slag or metal that flows from the work.
- Sparks that fly from the work.
- Improperly handled soldering iron.
- Dropped hot rivets.
- Improperly handled or improperly applied grounding clamps during arc welding.

Section 2. Purpose

The purpose of this Hot Work program is to ensure that welding, cutting, and other hot work for maintenance, construction, modification, or production are completed safely to protect employees and prevent fire related incidents through the use of safe work practices, fire prevention and protection guidelines, and use of the required permitting procedure.

Section 3. Roles and Responsibilities

Specific responsibilities for carrying out this program are identified by position below.

Provosts:

- Support and provide resources for the overall program.

Campus Safety Officers:

- Review the written program annually and recommend necessary updates.
- Assist the NHED Safety Administrator in ensuring program elements are implemented across the campus.
- Assist with evaluating the overall effectiveness of the program.

NHED Safety Administrator:

- Ensures annual review, evaluation, and necessary updates to program.
- Ensures that employee training records and required records are maintained.

Facility Manager:

- Authorize and issue job specific hot work permits to the individual performing the actual hot work.
- Inspect the work area prior to the start of hot work to ensure that all safety requirements are met before issuing a permit.
- Ensure that employees/contractors are familiar with and follow hot work procedures.
- Ensure that the employees completing the hot work are properly trained in welding and cutting and/or other related equipment use.
- Maintain records of hot work permits issued and hot work logs for a minimum of 3 years.

Deans/Supervisors:

- Oversee the program for their departments/work areas.
- Oversee employee training and ensure that the employees completing the hot work are properly trained in welding and cutting and/or other related equipment use.
- Ensure that employees/contractors are familiar with and follow hot work procedures.
- Ensure that construction projects are reviewed by the facility manager for hot work projects requiring permits.
- Assist with evaluating the overall effectiveness of the program.

Employees/Contractors:

- Comply with the requirements of this program.
- Understand the equipment, the hazards of working with the equipment, and the actions necessary to prevent and extinguish fires.
- Wear all necessary personal protective equipment (PPE) to perform tasks safely.
- Attend required training sessions.

Section 4. Fire Prevention and Protection Guidelines

The following guidelines must be followed by all employees and contractors during hot work operations, except for areas specifically designated and authorized for hot work, such as welding shops located in a maintenance or instructional areas. Additional information may be found in NFPA 51B.

1. **Inspection of Job Site:** The facility manager is to inspect the area where hot work operations will be performed before a hot work permit is issued.
1. **Hot Work Permit:** The attached permit is to be used. *(See sample permit form in Appendix 1 and go to Safety Systems under the Human Resources tab at www.nhed.edu to download actual permit form)*. It must be filled out for each hot work job and kept available at the work site.
2. **Fire Hazard Removal:** If the object requiring hot work cannot be moved, all movable fire hazards within that area are to be moved to a safe location at least 35 feet away from the hot work operations.
3. **Guards/Welding Blankets:** If the object requiring hot work cannot be moved, then guards are to be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards. Approved welding blankets are to be used to cover combustible materials.
4. **Automatic Sprinkler Protection:** If hot work is to be conducted in a building protected by automatic sprinklers, it must be verified that the sprinkler system is in service before conducting any hot work operations.
5. **Fire Watch:** A fire watch must be continuously present during the entire hot work activity and 30 minutes after completion. In addition, the work area must be monitored every 30 minutes for 4 hours after the hot work is complete.
6. **Restrictions:** Hot work operations are not to be conducted until the requirements listed above are met.

Section 5. Permitting Requirements

2. Permits are to be issued by the facility manager only to the individual performing the actual hot work operation.
3. Permits are to be issued and logged on a job-to-job basis. No permits are to be issued for general work in any location. Each specific job is to be issued a separate permit.
4. Once issued, the permit is to be posted in a visible location near the work site so that it may be observed during hot work operations.
5. Permits are not to be approved for any length of time exceeding the normal shift hours of those conducting the hot work, such as the welder or cutter. Exceptions include:
    a. When hot work operations are planned to be continued into the next shift with the same individual conducting the hot work, such as a welder or cutter.
    b. When emergency repair work warrants the continued operation of hot work into the next shift.
6. Logs are to be maintained for recording the issuance and retraction of hot work permits. The log is to be kept in such a manner as to identify each permit issued, the time of issue, time of completion, work area, and other necessary information, as required.

Section 6. Permit Authorization

Authorization for hot work operations is to be provided by the facility manager.

1. Authorization is not to be given for hot work operations until the safety precautions and requirements, listed in this program and within the permit, are met. Under no circumstances is a permit to be issued sight unseen. An inspection of the work site must be conducted by the authorizing agent prior to authorization.
2. Authorization is not to be granted for hot work operations if:
    a. For example, the welder or cutter is not properly trained in welding or cutting operations or similar.
    b. A fire watch is not identified and present at the work site.
    c. Welding, cutting, or other equipment is not in proper operating condition and/or free from defect or damage.
    d. The authorizing individual feels that the operation may endanger the safety and welfare of workers, residents, students, and staff in the vicinity of the work.

Section 7. Program Review

Annual reviews of the Hot Work program are to be conducted and documented, including any changes or additions to the program or other related documents.

Appendix 1. Hot Work Permit Sample

This is a sample and not to be used as actual hot work permit.
See Facilities Supervisor for permit and authorization.

Global Property - Loss Prevention Engineering

HOT WORK PERMIT PART 1

AIG

Hot Work Being Conducted by:

☐ Employee:_____

☐ Contractor:_____

Issue Date:_____

Job, Task or PO #:_____

Location / Bldg & Floor:_____

Nature of Task: ☐ Cutting ☐ Welding ☐ Brazing ☐ Grinding ☐ Soldering ☐ Thawing Pipe ☐ Torch Applied Roofing

☐ Other_____

The location where this work is to be done has been examined and necessary precautions have been taken. Permission is hereby granted for this work.

Name of Person Issuing Permit:

_____

Signed:

_____

Permit Expires

Date_____ Time_____ ☐ AM ☐ PM

Extended Fire Watch

Extended Fire Watch Required ☐ Yes ☐ No

Extended Fire Watch Duration _____ hours

Permit Number: 0000001

Can the work be completed using a different method or at a less hazardous location, such as the maintenance shop, which would not require the use of a hot work permit?

Instructions:

1. **Verify that all applicable precautions have been implemented and that the site is safe for hot work.**
2. **Part 1 (first page) should be completed and retained for records.**
3. **Issue Part 2 to individual(s) conducting the hot work and see additional instructions on Part 2.**
4. **Important note: The facility should follow the guidelines listed on this form or those required by local jurisdiction, if more stringent.**

Required Precautions Checklist

☐ Review of the operations / tasks have been conducted and temporary Management of Change issued as necessary.

☐ Work permits or line cutting permits have been reviewed and issued as necessary.

☐ Sprinkler protection, hose streams and fire extinguishers are in service and operational.

☐ Hot work equipment is in good repair and secured as necessary.

Within 35 ft (11 m) of task area(s)

☐ Floors have been swept clean of combustibles.

☐ Flammable liquids, combustible liquids, combustible dust, lint and oil deposits have been removed.

☐ Combustible floors have been wet down or covered with damp sand, metal or other noncombustible shields.

☐ Combustible materials have been removed or protected with fire resistive tarpaulins or metal shields.

☐ All wall and floor openings have been covered.

☐ Fire resistive tarpaulins have been suspended beneath the work to collect sparks.

Work on Walls or Ceilings

☐ Construction is noncombustible and without combustible coverings or insulation.

☐ Combustibles have been removed away from opposite side of wall or ceiling.

Work on Enclosed Equipment

☐ Equipment has been cleaned of all combustibles.

☐ Containers have been purged of flammable, combustible liquids, vapors or gases.

☐ Pressurized vessels and piping have been removed from service, isolated and vented (LOCK OUT TAG OUT).

☐ Equipment with stored energy or electrical energy has been removed from service and isolated (LOCK OUT TAG OUT).

Fire Watch

☐ Fire watch will be provided during the task for a minimum 1-hour after the task has been completed or for the extended fire watch duration.

☐ Fire watch has been trained in the use of and provided with portable fire extinguishers or charged fire hose line(s).

☐ Fire watch is posted on lower floors if an opening exists that would allow sparks or embers to drop down.

☐ Fire watch is trained on how to properly report a fire alarm via the plant fire alarm procedures or fire alarm system.

☐ Hot work area will be monitored for 3-hours after the job is finished.

 Form 615 (6/2016)