Hot Work Procedures

Purpose

This procedure will provide the knowledge and equipment required to minimize the identified workplace hazards associated with Hot Work.

These procedures will provide:
- information on what is considered Hot Work.
- information on the substantial risks due to fires associated with Hot Work.
- information on establishing alternative measures to Hot Work for employees and contractors in order to prevent losses.
- standard practices and a permit process with the goal of preventing loss of life and property when Hot Work must be performed.

Legislation

Section 370 of the Occupational Health and Safety Regulations requires:

Hot Work

(1) Where a flammable substance is or may be present, an employer or contractor shall ensure that no hot work is performed until:
   (a) suitable tests have been conducted that;
       (i) indicate whether the atmosphere contains a flammable substance in a quantity sufficient to create an explosive atmosphere; and
       (ii) confirm that the work may be safely performed; and
   (b) the work procedures developed pursuant to clause 363(1)(b) have been implemented to ensure continuous safe performance of the work.

(2) While hot work is being performed, an employer or contractor shall conduct tests described in clause (1)(a) at intervals appropriate to the work being performed and record the results.

(3) An employer or contractor shall not require or permit any hot work to be performed in the vicinity of a material that may constitute a fire hazard until suitable steps have been taken to reduce the risk of fire.

(4) An employer or contractor shall ensure that a container or piping that contains or has contained a flammable substance is purged using an effective method to remove the flammable substance from the container or piping before any hot work is begun on that container or piping.

(5) An employer or contractor shall not require or permit any welding or cutting of metal that has been cleaned with a flammable or combustible liquid until the metal has thoroughly dried.

Definitions

Competent means possessing knowledge, experience and training to perform a specific duty.

Engineering controls help reduce exposure to potential hazards either by isolating or removing the hazard from the work environment. Engineering controls include mechanical ventilation and process enclosure, and are preferred to other control measures such as the use of personal protective equipment.
Fumes are very small, airborne, solid particles formed by the cooling of a hot vapour. Fumes are smaller than dusts and are more easily inhaled.

Gas is a material without a specific shape or volume. Gases tend to occupy an entire space uniformly at normal room pressure and temperature. The terms vapour and fume are sometimes confused with gas.

Hot Work means work that produces arcs, sparks, flames or other sources of ignition.

Supervisor means a person who is authorized by the University of Regina to oversee or direct the work of employees or students.

Train means to give information and explanation to an employee with respect to a particular subject matter and require a practical demonstration that the employee has acquired knowledge or skill related to the subject matter.

Vapour is the gaseous form of a material which is normally solid or liquid at room temperature and pressure. Evaporation is the process by which a liquid is changed into a vapour.

Responsibilities

1. Vice-President (Administration) will:
   1.1 ensure that adequate resources are available to implement appropriate measures.
   1.2 require that the procedures is communicated to employees.
   1.3 require compliance with the procedures.

2. Associate Vice-Presidents, Deans, Directors, Department and Unit Heads will:
   2.1 ensure that the Procedures are communicated to affected employees.
   2.2 require compliance with the Procedures.
   2.3 ensure that all persons authorized to issue Hot Work Permits are competent to do so.
   2.4 require that contractors performing Hot Work operations at the University are provided with a copy, and provide written assurance that their employees are trained in Hot Work and will comply with the University’s Hot Work procedures.
   2.5 ensure a central registry is maintained of all issued Hot Work permits.
   2.6 ensure that the Hot Work Procedures is implemented, maintained, and reviewed at intervals not greater than 3 years, and whenever there is a change of circumstances that may affect the health and safety of employees.

3. Facilities Management (FM) Managers and Project Managers will:
   3.1 ensure that employees who are required to participate in Hot Work activities are trained in Hot Work procedures, and such other matters necessary to ensure their health and safety (e.g., the use of a respirator, safe work procedures).
   3.2 require the completion of the Hot Work Permit Hazard Assessment Checklist prior to the issuance of a Hot Work Permit.
   3.3 ensure that a copy of all issued Hot Work permits are filed in the central registry.
   3.4 ensure that contractors are provided and comply with the University’s Hot Work procedures.
3.5 maintain a record of all Hot Work permits issued.

4. Supervisors of a Hot Work process will:
   4.1 conduct a pre-job meeting with all Hot Work participants prior to commencing.
   4.2 require that the permit is readily available during the operation.
   4.3 conduct periodic inspections of the Hot Work locations.
   4.4 require compliance with the conditions set out in the Hot Work permit.
   4.5 ensure completion of the Hot Work permit and its return to the person who issued it.
   4.6 ensure that employees receive training on all aspects of this procedure.
   4.7 provide Incident Reports to Health, Safety & Environment (HSE) within 24 hours of an injury, suspected occupational exposure, property damage or occurrence which may have resulted in an injury, exposure or damage if conditions had been different.

5. Employees will:
   5.1 work in accordance with the University’s Hot Work procedures.
   5.2 not perform Hot Work until a Hot Work Permit is obtained.
   5.3 complete an Incident Report and notify their supervisor if during Hot Work an injury, suspected occupational exposure, property damage or occurrence which may have resulted in injury, exposure or damage if conditions had been different occurs.

6. Contractors and their employees will:
   6.1 work in accordance with the University’s Hot Work procedures.
   6.2 notify the Project Manager, or other person designated by the University, prior to commencing Hot Work.
   6.3 obtain a Hot Work permit prior to performing any Hot Work.
   6.4 report any Incidents to the Project Manager.

7. Health & Safety Committee will:
   7.1 support and promote implementation of the procedures and related education and training.
   7.2 monitor the adequacy and effectiveness of the procedures.

8. Health, Safety & Environment will:
   8.1 provide expertise and advice to all levels of management, employees and students on matters pertaining to Hot Work requirements.
   8.2 receive, review and investigate all incidents related to Hot Work and provide recommendations for corrective action.
   8.3 ensure the procedures are kept current.
   8.4 audit the Hot Work procedures.

Hot Work Procedures

Prior to performing any hot work, alternative methods of conducting the work should be considered with a view to decreasing the risk of loss due to fire at the University.

If reasonably possible, the Hot Work should be conducted in a fixed area designated for doing Hot Work. Designated areas could include non-combustible buildings or within secured non-combustible barriers. All combustibles within the work area should be removed and extinguishers or other fire protection provided.
If Hot Work cannot be conducted within a designated Hot Work area, the following requirements must be followed:

- Prior to starting a project that requires Hot Work, the supervisor of the welder, or in certain cases the welder of the contractor or subcontractor, shall obtain a Hot Work permit from Director Maintenance FM. The permit will be good for one 8-hour shift and must be posted in the area of work. Once the operation is completed the permit must be signed and returned to the Director Maintenance to be kept on file.
- A separate Hot Work permit must be issued for each job.
- The Safety Precautions checklist described in the Hot Work Permits will be followed for all Hot Work.
- A Fire Watch will be maintained in accordance with these procedures.
- Hot Work is not permitted where conditions create an unsafe environment.
- The requirement for a Hot Work permit may be waived for work that will be conducted in a construction/renovation area that has been approved as a designated Hot Work area by the Director Maintenance.
- A Hot Work permit is not required in outdoor areas that are free of combustible material.

Hot Work shall not be permitted in the following areas until the conditions prohibiting Hot Work have been modified:

- In the presence of explosive atmospheres, or in situations where explosive atmospheres may develop inside contaminated or improperly prepared tanks or equipment which previously contained flammable liquids.
- In areas with an accumulation of combustible debris, dust, lint and oily deposits.
- In areas near the storage of exposed, readily ignitable materials such as combustibles.
- On a container such as a barrel, drum or tank that contained materials that will emit toxic fumes when heated.
- In a confined space, until the space has been inspected and determined to be safe. Refer to the Confined Space Procedures of the Safety Program.

**Information and Responsibilities**

Fires caused by hot work significantly affect our ability to do business. Employees and contractors partner with the University in preventing losses.Avoiding hot work by using alternative methods where possible is required. If hot work cannot be avoided, the procedures must be strictly followed and the permit posted. Contractors must sign a legal contract applicable to work they perform for the University.

**Contractors**

The University Project Manager or Facilities Managers will require you to follow our procedures for hot work. If appropriate, the supervisor will introduce you to other workers in the area to discuss unique work conditions you should be aware of before your work begins. The University’s hot work rules must be followed. Violations will result in terminating the work.
Hot Work Rules

A hot work permit is required for any temporary operation producing open flames or sparks. This includes brazing, cutting, grinding, soldering*, pipe thawing, torch-applied roofing and welding.

1. If there is a practical and safer way to do the job without hot work, that method must be used.

2. No hot work is permitted without authorization, in the form of a signed hot work permit. This permit will be valid for a maximum of one shift, or eight hours, whichever is shorter.

3. Specific fire fighting equipment and protection material will be required at the hot work site before any work can be started.

4. No hot work is permitted without a designated trained person present as the fire watch. This fire watch will have total control over the hot work area for fire prevention. If unsafe conditions are observed, the hot work operation will be stopped until the hazard is neutralized or eliminated.

5. The person performing the hot work will verify that all hot work equipment is in proper working order and in a firesafe condition. An inspection of the equipment will be conducted by the firesafety supervisor before the hot work permit is issued. Any unsafe equipment will be removed from service.

6. Any contractor-owned equipment or material to be stored on the facility overnight must be properly secured on an area designated by the firesafety supervisor.

* Pending a risk assessment identifying higher than normal risk.
WARNING!

HOT WORK IN PROGRESS
WATCH FOR FIRE!

IN CASE OF AN EMERGENCY:

CALL: __________________________________________

AT: _____________________________________________

______________________________________________

______________________________________________

______________________________________________

WARNING!
This hot work permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing, and Welding.

**PART 1**

**Authorization: (Print Clearly)**

This permit will authorize _____________________ of ______________ to:

- (name)
- (company)

- (describe activity)

- (starting date) _____________________
- (time) _____________________

- (expiry date) _____________________
- (time) _____________________

Building or Area: _____________________

Type of Hot Work: _____________________

**Safety Precautions**

- □ Fire Safety / Control Centre notified
- □ Fire extinguisher present.
- □ Vessels, piping and equipment removed from service & purged or N/A
- □ Additional Safety Check List on reverse side completed and understood.

**IN CASE OF FIRE CALL 911**

CAMPUS SECURITY – 585-4999

Comments: _____________________

Permit Issued By: _____________________

Area Approved By: _____________________

Employee Performing Work: _____________________

(signature)

**THIS PERMIT MUST BE DISPLAYED PROMINENTLY AT THE WORK SITE**
PART 2

Safety Check List
- Check with Facilities Management Electrical for possible detectors that could be activated
- Fire Extinguisher available and in working order (Supplied by working crew)
- Equipment inspected and in good repair

Requirements within 35 ft. (11 m.) radius of work site
- Flammable liquids, oily deposits, dust and lint removed
- Explosive atmosphere in area eliminated
- Floor swept & kept clean
- Combustible floors covered with fire resistant material
- Remove other combustibles where possible. Combustibles moved away from opposite side of wall/ceiling. Otherwise protect with fire resistive tarpaulins or metal shields
- All wall and floor openings covered
- If working at elevated heights, warn people below and suspend fire resistive tarpaulins beneath work

Work on walls or ceilings
- Construction is non-combustible and without combustible covering or insulation
- Combustibles on other side of walls moved away

Work on enclosed equipment or N/A
- Is confined space entry permit required?
- Enclosed equipment cleaned of all combustibles
- Containers purged of flammable liquids/vapors
- Pressurized vessels, piping, & equipment removed from service, isolated, & vented

Fire Watch/Hot Work area monitoring
- Fire watch during and for 60 minutes after work, including coffee and lunch breaks
- Fire watch trained in use of Fire protection equipment and sounding alarm
- Fire watch may be required for adjoining areas, above and below

Other precautions taken

All work must be completed by 3:30 p.m. to facilitate the reactivation of the fire alarm system. Call Facilities Management Electrical (585-4656) to re-activate the fire alarm system after Hot Work is complete.

Except in cases of emergency, Part 1 of this permit must be delivered or faxed to Health, Safety & Environment (FAX 585-5232) at least 24 hrs prior to start