THOMPSON RIVERS UNIVERSITY | Safety & Emergency Management

Safe Work Procedure

Hot Work Safety Procedures

OSEM 18.19.2

Program/Services	**Safe Work Procedures**		**Department:**
Contractors, Instructors, Students			Safety and Emergency Management
Personal Protective Equipment or Devices Used • Welding Goggles • Welding Helmet • Work Gloves • Work Boots • Close fitting clothing or protective clothing must be worn • Jewellry and watches should NOT be worn • Hearing protection	**Training Requirements** • In class training • Welding training	**Applicable Forms** • Hot Work Precaution Checklist (10.18.2) • Hot Work Permit (10.17.2)	**Effective Date:** May 31, 2019

ELECTRICAL HAZARD	**PINCH POINTS**	**HIGH SOUND LEVELS**	**FOOT INJURY**	**FLAMMABLE**
				
Do not attempt to service electrical wires.	Use LOCK-OUT procedures when performing maintenance or conducting any work within 12” of an exposed pinch point. **NEVER** put your hands or feet near an exposed pinch point or gears!	**HEARING PROTECTION** is required when working in designated. Required when Sound levels exceed 85 dB areas.	Approved protective footwear is required when there is the risk of a foot injury.	Due to flammable liquids, gases or combustible materials. Ensure hot work permits have been completed and fire protection is in place.

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

WSBC Regulations Part 12 Section 12.116

Burning, welding or other hot work must not be done on a vessel, tank, pipe, or structure, or in any place where the presence of flammable or explosive substances is likely until:

a) Tests have been made by a qualified person to ensure the work may be safely performed.
b) Suitable safe work procedures have been adopted, including additional tests made at intervals that will ensure the continuing safety of the workers.

Responsibilities

Supervisors/ Instructors of a Hot Work process will:

- Conduct a pre-job meeting with all Hot Work participants prior to commencing.
- Require that the permit is readily available during the operation.
- Conduct periodic inspections of the Hot Work locations.
- Require compliance with the conditions set out in the Hot Work permit.
- Ensure completion of the Hot Work permit and its return to the person who issued it.
- Ensure that employees receive training on all aspects of this procedure.
- Provide Incident Reports to Safety & Emergency Management (OSEM) 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.

Employees will:

- Work in accordance with the University's Hot Work procedures.
- Complete a Hot Work checklist prior to performing hot work operations
- Not perform Hot Work until a Hot Work Permit is obtained.
- 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.

Contractors and their employees will:

- Work in accordance with the University's Hot Work procedures.
- Notify the Project Manager, or other person designated by the University, prior to commencing Hot Work.
- Obtain a Hot Work permit prior to performing any Hot Work.
- Obtain a Hot Work checklist to be completed to performing any Hot Work
- Report any Incidents to the Project Manager.

Health, Safety & Environment will:

- Provide expertise and advice to all levels of management, employees, and students on matters pertaining to Hot Work requirements.
- Receive, review and investigate all incidents related to Hot Work and provide recommendations for corrective action.
- Ensure the procedures are kept current.
- 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 Safety & Emergency Management or Facilities. 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 OSEM 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 of Facilities & Safety & Emergency Management.
- 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 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

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.

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.

- If there is a practical and safer way to do the job without hot work, that method must be used.
- 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.
- A hot work checklist must be completed prior to any work being performed to ensure the area is safe for the procedure.
- Specific firefighting equipment and protection material will be required at the hot work site before any work can be started.
- 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.
- The person performing the hot work will verify that all hot work equipment is in proper working order and in a fire-safe condition. An inspection of the equipment will be conducted by the supervisor before the hot work permit is issued. Any unsafe equipment will be removed from service.
- Any contractor-owned equipment or material to be stored on the facility overnight must be properly secured on an area designated by the Director of Facilities & Safety & Emergency Management,

RECORDS/VERIFICATION OF UNDERSTANDING

Records

- All hot work permits and checklists will be sent to OSEM for entry into database and records

SUMMARY OF CHANGES

Revision #	Date	Change (include section #)	Issued By
1	03/04/2014	NEW	OHS Officer
2	05/31/2019	New version and new format	Safety Officer

Hot Work Precautions Checklist

Date: _____

Area where hot work will be done: _____

General

☐ Automatic sprinklers, hoses, and portable extinguishers are in service and in good operating condition.
☐ Hot work equipment appears to be in good operating condition and safely installed.

Precautions within a 15-mete radius (50 feet)

☐ Set up a safety zone and restrict its access to authorized personnel only.
☐ Install fire-resistant screens to protect against sparks.
☐ Install fire-resistant screens to protect against harmful welding flashes.
☐ Eliminate any risk of an explosive atmosphere (combustible vapors or dust).
☐ Remove all flammable liquids, dust, powders and oily products.
☐ Remove all other combustible materials. Otherwise, use fire-resistant canvases, spark screens or metal partitions as a mean of protection.
☐ Sweep and wet down floors in an area of hot work.
☐ Protect combustible floors with fire-resistant canvases or plates.
☐ Obstruct all openings in walls and floors using fire-resistant canvases.
☐ Inspect the area to detect any risk for the workers and take the necessary preventative measures.
☐ Suspend any nearby activity that could constitute a risk (dust collector, nearby painter, solvent, glue, etc.).
☐ Ventilate the area with appropriate ventilating equipment, if there is a risk of smoke.
☐ Ensure that sprinkler heads are covered if they are vulnerable due to the hot work.
☐ Ensure that smoke detection devices are disabled in the area.

Work within Enclosed Spaces or Closed Equipment

☐ Apply the lock-out procedure (OSEM 18.18.2).
☐ Apply the confined space procedure (18.09.2).
☐ Remove any combustible matter from the equipment.
☐ Purge the containers to eliminate any flammable liquids/vapors.

Fire Watch / Hot Work Monitoring

☐ Appoint fire watch person.
☐ Monitor fire risks during work and one hour thereafter, including during breaks and meals.
☐ Have access to an appropriate extinguisher and small fire hose, if necessary.
☐ Be familiar with the use of a portable extinguisher and know how to activate the Fire Alarm.
☐ A final check will be completed 4 hours after completion of work.

Verification of Equipment

☐ Perform the necessary inspection of equipment before use.
☐ Inspect the hose on gas equipment and protect against damage.
☐ Inspect gas bottles, pressure gauges, and connections and protect against damage.
☐ Protect electric cables against damage.
☐ Have an appropriate and operational fire extinguisher in place.

Personal Protective Safety Equipment

☐ Use the required personal protective equipment to protect your face, eyes, and body against excessive heat, rays, noise and smoke (i.e. Long sleeve shirt, welding helmet, visor, etc.).

HOT WORK PERMIT

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, soldering, thawing pipes, torch applied to roof, grinding and welding.

PART 1: INFORMATION & CONTACTS

Project/Job #

_____

☐ **Employee** ☐ **Students** ☐ **Contractor**

Name

_____

Location/Building/Floor/Equipment of Hot Work

_____

Nature of Job

_____

Date and Time of Hot Work

_____

I have read and understood TRU's Hot Work Procedures and will ensure all requirements are met

Name of Hot Worker_____

Signature_____

Supervisor/Instructor_____

Signature: _____

PART 2: SAFETY CHECKLIST

Hot Worker (person performing the work)

I have completed the required safety checklist attached with this permit, added any additional precautions necessary and have fulfilled all the requirements as they relate to this permit.

☐ **Yes** ☐ **No**

Supervisor/Instructor

☐ **Yes** ☐ **No**

Name of Fire Watch

Person_____Phone_____

This area is safe for entry and work as outlined above and I authorize this work

Name_____ _____Emergency Phone Number_____

Date/Time_____
Signature_____

PART 3: FIRE WATCH

To be completed and submitted to after fire watch is conducted.

Time hot work began: _____

Time hot work ended:_____

Fire Watch Signoff: the work area and all adjacent areas to which sparks and heat might have spread were inspected after the work was completed and were found fire safe.

Fire Watch for 60 minutes after completion of work Yes ☐

Periodic monitoring for 4 hours after completion of work Yes ☐

Final check of area 4 hours after completion of work Yes ☐

_____ _____

Name Phone
Date/Time

PART 4: APPROVAL

Facilities Management use beyond this point

APPROVED □ NOT APPROVED □

Permit Expires (date/time) _____

Conditions_____