



Hot Work Plan

Florida Institute of Technology (Florida Tech)

Environmental Health & Safety (EHS)

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Revision History

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Contents

Introduction.....	3
Definitions	3
Responsibilities.....	3
Designated Hot Work Areas	5
Hot Work Permit Areas.....	5
Precautions and Safeguards	5
Fire Watch.....	6
Monitoring Requirements.....	7
Contractors	7
Training	7
Annual Plan Review and Audit.....	7
Records Retention	7
References	7
Appendices.....	8
Hot Work Permit Request Form.....	9
Hot Work Permit Form	10
Hot Work Warning Sign	11

Introduction

Florida Tech is committed to providing a safe and healthful environment for all employees, students, and visitors.

The purpose of the Hot Work Plan is to establish minimum requirements and ensure compliance with all applicable national, state, and local regulations for all hot work activities at Florida Tech. This plan is applicable to all employees, staff, students, contractors, and visitors to Florida Tech. In cases where Florida Tech procedures are more stringent than applicable regulations, the Florida Tech procedure will apply.

The Hot Work Plan provides a framework to reduce risk and liability by using control measures to protect personnel, property, and the environment from the hazards of hot work activities. Hot Work activities include but are not limited to burning, welding, cutting, torch cutting, brazing, torch soldering, and applications that generate heat, sparks, arcs, open flames, or other fire hazards in proximity to flammable or combustible materials. Hot Work activities conducted in designated hot work areas are exempt from the scope of this plan.

Definitions

Affected Employee: a person working in the proximity of hot work operations who is not directly involved.

Authorized Employee: a person trained and fully knowledgeable of the equipment, process, and work to be completed that is performing the hot work tasks.

Designated Hot Work Area: Areas where flammables or combustibles which could propagate a fire are not present. In these areas work can proceed with the need for a hot work permit or fire watch. Welding shops, metal working areas, and maintenance shops usually fall into this category provided they are isolated or at sufficiently safe distance from flammables or combustible.

Fire Watch: Trained personnel who are in attendance during and after the entire hot work operations and are immediately available to extinguish a fire or take other effective action if needed.

Hot Work: Any work involving heat, open flame, or spark producing devices in proximity to flammable or combustible materials. Activities are, but are not limited to: acetylene torches, arc welding equipment, portable grinders, propane torches, explosive actuated tools, or any related heat-producing activities that could ignite combustible materials or flammable materials or atmospheres.

Hot Work Permit: A form used to authorize hot work. As a minimum it lists the fire precautions needed, the nature and location of the work to be performed, and the date and time work begins and ends. The Permit must be signed by the Primary Responsible Person prior to initiating hot work activities that are performed outside a designated hot work area.

Responsibilities

The Office of the President

The office of the President of Florida Tech is responsible for ensuring this procedure is implemented and followed and that adequate resources are provided to support this procedure.

Department Heads and Supervisors

Department heads and supervisors are responsible for:

1. Providing the resources needed to implement this procedure and to ensure employees are trained and comply with the requirements as outlined,
2. Participating in audits and safety walkthroughs to identify hazards in the workplace and gaps in the procedures as a way of driving continuous improvement,
3. Ensure that there are no hot work activities being commenced outside designated hot work areas without the issuance of a hot work permit, and
4. Report hot work activities to EHS.

Authorized Employees

Authorized employees are the only ones allowed to conduct hot work activities. They are responsible for:

1. Making necessary arrangements for equipment shutdowns with production (i.e. notify Facilities 24 hours before beginning hot work),
2. Completing the hot work permit and posting in the area until all hot work is finished,
3. Providing a fire watch for the area of the hot work, and
4. Returning the completed hot work permit to EHS.

Fire Watch

The fire watch is responsible for observing the hot work and maintaining control of the hot work area during and after the procedure. The fire watch should be able to observe all affected spaces and has the authority to stop hot work if conditions become unfavorable.

Facilities

The responsibilities of Facilities include:

1. Maintaining and supervising the Hot Work Plan,
2. Requesting hot work permits,
3. Supervision of hot work activities to ensure compliance,
4. Stopping and suspending hot work activities not authorized by a hot work permit, and
5. Managing contractors regarding hot work activities.

Environmental Health and Safety

The responsibilities of Environmental Health and Safety include:

1. Implementing the Hot Work Plan,
2. Reviewing and auditing this plan to address new or modified procedures or changes in facility layouts and ensure compliance,
3. Issuing hot work permits,
4. Testing potentially hazardous atmospheres prior to start of hot work,
5. Auditing and inspecting hot work procedures to ensure compliance, and

6. Implementing training for authorized employees on the requirements of the Hot Work Plan.

Designated Hot Work Areas

Designated hot work areas are areas where hot work can proceed without the need for a hot work permit. These areas are isolated and do not have flammable or combustible material present that could propagate a fire. Isolation shall be provided by welding curtains, non-combustible insulating constructions or barriers. A notice shall be posted that hot work may be carried out without a permit, but only within the confines of the area. The notice shall include the following wording: "A Hot Work Permit is not required within this area." A fire extinguisher must be available near where the work is taking place.

Hot Work Permit Areas

Hot Work will not proceed in areas that require permits until one is issued. A properly completed Hot Work Permit (see Appendix Form 1) shall be displayed at the job site until the hot work has been completed. Hot work permits are issued for one shift only. New shifts and new work crews require a new permit to be issued. Any potential changes to working conditions shall be evaluated to determine if the issuing of a new permit is necessary. The Facilities department must ensure that hot work permits are completed for all hot work activities (including for contractor work) not in defined designated hot work areas. Multiple hot work tasks require separate permits whenever the potential for fire hazards and/or control measures are different.

Barbeque grills are not exempt and need the provision of hot work permits. A fire watch is required, a fire extinguisher must be readily available, and all flames must be fully extinguished when work is completed. Areas outside buildings must be at least 35 feet from any combustible material or structure, vehicular traffic, and not in production areas or around aircraft. Indoor grilling activities under tents or building canopies are strictly prohibited unless a permit is received from the local regulatory fire authority.

Precautions and Safeguards

1. Avoid hot work of any kind in areas where there is handling, processing, or storing of flammable liquids, gases, or combustible dusts.
2. Appropriate personal protective equipment must be worn to protect the eyes, face, hands, arms, body, feet, etc. from the hazards of hot work and potential area process materials.
3. Clothing shall be worn that minimizes the potential for ignition, burning trapping hot sparks, electric shock, or arc flash.
4. Automatic sprinklers or other fixed fire protection, when installed, must be automatic, ready service, or an alternative protection must be provided.
5. A fire extinguisher must be available in the immediate vicinity of the work.
6. If the hot work requires impairment of fire suppression and detection systems, EHS and facilities must be notified.
7. All equipment used for hot work should be in safe operating condition.

8. Flammable gas tanks and containers should be secured. Consult the Compressed Gas Safety Plan for details.
9. The hot work area should be clear of all flammables and combustibles to a 35 ft radius. If this is not feasible, isolation shall be provided by welding curtains, non-combustible insulating constructions or barriers.
10. If combustible walls or floors are present, they must either be completely wetted or covered in non-combustible material.
11. Openings in walls and floors where hot slag or flame may penetrate shall be covered with non-combustible materials.
12. Building walls and flammable/combustible materials directly adjacent to the other side of the wall shall be moved or adequately shielded from potential ignition.
13. Machinery and equipment directly involved in hot work must be purged of all flammable, combustible or hazardous materials. Lines must be purged, blanked, and valves closed, locked, and tagged.
14. Equipment adjacent to the hot work area that may contain flammable or combustible material shall not be disassembled, steamed, ventilated, or flushed unless consideration is given to how the actions might affect the hot work and how the hot work may affect the equipment.
15. Flammable vapor tests shall be conducted prior to issuing a hot work permit if flammable vapors, liquids, or gases may be present near the work site. Hot work shall only be authorized when initial flammable vapor concentration reading is less than or equal to 5% of the Lower Explosive Limit (LEL) and oxygen concentration is less than or equal to 23.5%. Mechanical ventilation and continuous monitoring may be needed if there is a likelihood for changing conditions in vapor concentrations.
16. Continuous LEL and oxygen monitoring shall be provided where work includes open flames, welding, or grinding within confined spaces, within 35 feet of enclosures, piping, or drains where vapors and liquids may accumulate, or within 35 feet of an electrically classified area.
17. Using non-classified electrical equipment in electrically classified areas can not proceed without a related hot work permit. When permitted, constant LEL monitoring must be performed, and the fire watch shall discontinue operations if the LEL exceeds 5%.

Fire Watch

At least one person shall be designated as a fire watch prior to all hot work operations except those occurring in designated hot work areas. Operations on multiple levels or on opposite sides of walls require additional fire watch personnel. The names of all fire watch personnel shall be written on the permit. Duties include observance for adverse conditions, such as fires, spills, or changes in conditions as specified in the permit. If these conditions occur, it is the responsibility of the fire watch to take mitigating actions and to report concerns to those performing the work. A fire extinguisher of the appropriate type must be within reach, and the fire watch should only attempt to extinguish fires that are within the capacity of the equipment available as well as the training of the fire watch. Reliable emergency communications such as a cellular phone, land-line phone, or two-way radio must be

available. Fire watches should remain at the site of the work at least 30 minutes after completion to confirm there are no sparks or potential of a latent fire.

Monitoring Requirements

A sixty minute minimum monitoring of the site must be in place. Monitoring methods may be through automatic smoke detections systems, security cameras, security rounds, or workers in the area. After the 60 minutes, the permit retriever must visually ensure no smolder or smoke has developed and then sign the work permit.

Contractors

Contractors must follow either the hot work plan at Florida Tech or their own hot work procedures provided they use the more stringent plan. It is the responsibility of Florida Tech to inform the contractor about our hot work plan and to provide them a copy. Facilities and EHS must verify that the contractor's employees are following the procedure. Any contractor that violates the hot work procedure must not be allowed to continue working at the site.

Training

EHS will conduct annual training for all Florida Tech employees that conduct hot work activities. New or transferred employees will be trained in accordance with the EHS training matrix. Training records will be maintained by EHS.

Annual Plan Review and Audit

EHS will review the plan annually and update as needed to ensure employees comply with the provisions of the hot work plan, such as properly storing and using compressed flammable vapors and gases.

Records Retention

All records concerning the hot work plan shall be kept with the office of EHS. The records include training and inspection checklists.

References

29 CFR 1910.252 - [OSHA General Requirements: Welding, Cutting, and Brazing](#)

U.S. Chemical Safety and Hazard Investigation Board – [Safe Hot Work Practices](#)

HOT WORK PERMIT

BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED? IS THERE A SAFER WAY?
This Hot Work Permit is required for any temporary operation involving open flames or which produces heat and/or sparks. This includes but not limited to: Brazing, Cutting, Grinding, Soldering, Torch Applied Roofing, Welding and the use of Heat Guns.

PART 1 INSTRUCTIONS

1. University Representative:
2. Verify precautions listed at right (or do not proceed with the work).
3. Complete and retain PART 1.
4. Issue PART 2 to person doing job.

HOT WORK BEING DONE BY:

EMPLOYEE: _____

DEPARTMENT: _____

CONTRACTOR: _____

SITE FOREMAN: _____

PROJECT MANAGER: _____

DATE: _____

LOCATION / BUILDING & FLOOR: _____

NATURE OF JOB: _____

Required safety precautions have been done.
Signature of responsible person
Permission is given to do this work, provided
required precautions have been done.

SIGNED: (Supervisor) _____

PERMIT EXPIRES: _____

DATE: _____

TIME: _____

Any resulting fire alarm, fire and subsequent University penalty or fine is the responsibility of the employee or contractor doing the work

REQUIRED PRECAUTIONS CHECKLIST

- Available sprinklers, hose streams and extinguishers are in service.
 - Hot work equipment in good repair.
- WITHIN 35 FEET OF WORK
- Flammable liquids, dust, lint and oily deposits removed.
 - Explosive atmosphere in area eliminated.
 - Floors swept clean of combustibles.
 - Combustible floors wet down, covered with damp sand, metal or fire-resistant tarpaulins.
 - Remove other combustibles or protect with fire-resistant tarpaulins or metal shields.
 - All wall and floor openings covered.
 - Fire-resistant tarpaulins suspended beneath work to collect sparks.
- WORK ON WALLS OR CEILINGS
- Construction noncombustible and without combustible covering.
 - Combustibles moved away from other side of walls.
- WORK ON ENCLOSED EQUIPMENT
- Equipment cleaned of all combustibles.
 - Containers purged of flammable vapors.
- FIRE WATCH
- Fire watch to be provided during and for 30 minutes after work.
 - Fire watch to be provided for 4 hours after work in areas without smoke detection.
 - Supplied with suitable extinguishers trained in the use of equipment and in sounding fire alarm.
 - Fire watch may be required for adjoining areas above and below.
- OTHER PRECAUTIONS
TAKEN: _____

WARNING

HOT WORK IN PROGRESS WATCH FOR FIRE

PART 2

INSTRUCTIONS

1. Person doing Hot Work: Indicate time started and post permit at Hot Work location.
2. After Hot Work, indicate time completed and leave permit posted for fire watch.
3. Fire Watch: Prior to leaving area, do final inspection and sign permit.
4. Return completed permit to Project Manager or Risk Management before leaving campus.

HOT WORK BEING DONE BY:

EMPLOYEE _____

DEPARTMENT _____

CONTRACTOR _____

SITE FOREMAN _____

PROJECT MANAGER _____

DATE _____

LOCATION / BUILDING & FLOOR _____

NATURE OF JOB _____

Required safety precautions have been done.

Signature of responsible person

Permission is given to do this work provided
required precautions have been done.

SIGNED: _____

PERMIT EXPIRES: _____

DATE: _____

TIME: _____

TIME STARTED: _____

TIME FINISHED: _____

FIRE WATCH SIGNOFF

Work area and all adjacent areas to which sparks and heat might spread were inspected during the fire watch period and were found fire safe.

SIGNED: _____ **(Print & Sign)**

WARNING!

**HOT WORK IN
PROGRESS**

WATCH FOR FIRE

IN CASE OF AN EMERGENCY

CALL: 674-8111

SECURITY OFFICE

WARNING