A. POLICY
1. This procedure follows requirements set forth in 29 CFR 1910.252.
2. This policy applies to all “Hot Work” operations being done at Alvernia University by
   Alvernia University employees and outside contractors.

B. PURPOSE
The purpose of this policy is to provide written procedures to prevent the outbreak of fire, fire
alarm activations, and smoke and odor migrations in Alvernia University buildings, including
University-owned properties, resulting from any temporary operation involving the use of open
flames or which produces heat and/or sparks.
This includes but is not limited to: brazing, cutting, grinding, torch soldering, thawing pipes, torch
applied roofing, and welding.

C. DEFINITIONS
“Hot Work” means any operation producing flame, sparks or heat including cutting, welding,
brazing, grinding, sawing, torch soldering, thawing frozen pipes, applying roof covering etc.

“Hot Work Area” means the area exposed to sparks, hot slag, radiant heat, or convective heat as
a result of the “Hot Work”.

“Hot Work Equipment” means electric or gas welding or cutting equipment used for “Hot Work”.

“Hot Work Permit” means a special permit, which authorizes “Hot Work” activities at a specific
location and time. Permits contain a checklist to be completed prior to commencing “Hot Work”
activities and also at the conclusion of the “Hot Work”.

“Hot Work Program” means a permitted program, carried out by approved facilities-designated
personnel, allowing them to oversee and issue permits for “Hot Work” conducted by their
personnel or at their facility. The intent is to have trained, on-site responsible personnel ensure
that required “Hot Work” safety measures are taken to prevent fires and fire spread.

“Fire Watch” means a trained individual stationed in the “Hot Work” area who monitors the work
area for the beginnings of potential, unwanted fires both during and after “Hot Work”. Individuals
must be trained and familiar with the operation of portable fire extinguishers and methods to
activate building fire alarm systems.

“Responsible Person” means a person trained in the safety and fire safety considerations
concerned with “Hot Work”. Responsible for reviewing the sites prior to issuing permits as part of
the “Hot Work” permit program and following up as the job progresses.

D. RESPONSIBILITIES
1. Alvernia University Safety Technician will
   a. Develop written “Hot Work” Program and revise the Program as necessary
   b. Provide “Hot Work” procedure training for supervisors and employees who perform
      “Hot Work” operations
   c. Obtain a “Hot Work” Operational Permit from the City of Reading Fire Marshall as
      needed
   d. Act as the Responsible Person for “Hot Work” events
e. Notify the City of Reading Fire Department at 610-655-6080 or 610-655-6041 prior to the start of “Hot Work”

f. Periodically audit operations, documentation and training

2. Alvernia University Maintenance personnel will
   a. Be thoroughly familiar with the Alvernia University “Hot Work” Program procedures
   b. Follow all “Hot Work” procedures
   c. Complete “Hot Work” Permits
   d. Participate in “Hot Work” and portable fire extinguisher training when scheduled
   e. Notify the Alvernia University Safety Technician as soon as it is known that “Hot Work” will be performed in order to obtain a “Hot Work” Operational Permit from the City of Reading
   f. Notify the Alvernia University Safety Technician to arrange for Fire Watch personnel
   g. Comply with all other safety regulations in effect (ie. Confined Space, Lockout-Tagout)

3. Fire Watch personnel will
   a. Be aware of the inherent hazards of the work site
   b. Ensure safe conditions are maintained during the “Hot Work” operation
   c. Have the authority to stop the “Hot Work” operations if unsafe conditions develop
   d. Have fire extinguishing equipment immediately available and be trained on how to use it. Will also carry a flashlight and cell phone.
   e. Call 911 immediately and activate emergency response in the event of a fire

4. Outside Contractors are responsible for
   a. Having “Hot Work” safety procedures as a part of their project safety programs.
   b. Providing the Alvernia University Safety Technician or the Maintenance Supervisor with a copy of the contractor’s “Hot Work” Permit

E. SPECIFIC PROCEDURES
1. “Hot Work” should not be performed if the work can be avoided or performed in a safer manner. When practical, objects to be welded, cut or heated should be moved to a designated safe location, i.e. maintenance shop.

2. If “Hot Work” must be performed, notify the Alvernia University Safety Technician in advance so that a “Hot Work Operational Permit” may be obtained from the City of Reading Fire Marshall’s office.

3. Prior to the start of “Hot Work”, the Alvernia University Safety Technician shall notify the City of Reading Fire Department at 610-655-6080 or 610-655-6041 to let them know where and when “Hot Work” will be performed. If the Safety Technician is known to be off-campus on the day that “Hot Work” will be performed, then the Maintenance Supervisor shall notify the City of Reading Fire Department.

4. Before “Hot Work” is permitted and at least once per day while the “Hot Work” permit is in effect, the “Hot Work” area shall be inspected by the Alvernia University Safety Technician to ensure that it is a fire safe area. The pre-“Hot Work” checklist must be completed by the Safety Technician. Information shown on the “Hot Work” permit must be verified by the Safety Technician prior to signing the “Hot Work” permit. If the Safety Technician is known to be off-campus on the day that “Hot Work” will be performed, then the Maintenance Supervisor may perform the pre-“Hot Work” inspection and complete the checklist.
5. The environment where “Hot Work” will be performed must be conducive to “Hot Work”. All other safety precautions apply when performing “Hot Work” (ie. Confined Space, Lockout-Tagout, etc.)

6. All precautions on the Alvernia University “Hot Work” Permit must be met prior to any work commencing. The Alvernia University Safety Technician will complete the pre-“Hot Work” checklist.

7. The Alvernia University “Hot Work” Permit is only good for the date specified on the permit.

8. An Alvernia University “Hot Work” Permit must be displayed at the work site during all “Hot Work” activities.

9. All building occupants must be suitably protected against hazards generated by the work. i.e. heat, sparks, fumes, welding rays, etc.

10. Before “Hot Work” begins:
   a. An appropriate fire extinguisher must be available and operable. Alvernia University has a 10 lb. ABC fire extinguisher that will be dedicated for “Hot Work” use. This extinguisher will be in addition to any other fire extinguishers in the work area. During “Hot Work”, the fire extinguisher must be readily accessible within 30 feet of the location where “Hot Work” is performed.
   b. Flammable and ignitable materials and debris must be moved at least 35 feet from the “Hot Work” area or covered and protected from the “Hot Work” by fire resistant material. Removing all flammable and ignitable materials and debris is preferred.
   c. Explosives, compressed gas cylinders or stored fuel must be moved at least 50 feet from the “Hot Work” area or covered and protected from the “Hot Work” by fire resistant material. Removing all explosives, compressed gas cylinders or stored fuel is preferred.
   d. Smoke and fire detectors in the immediate area of the “Hot Work” must be temporarily disabled until the “Hot Work” is completed.
   g. Automatic sprinkler protection may not be shut off while “Hot Work” is performed. Where “Hot Work” is performed close to automatic sprinklers, noncombustible barriers or damp cloth guards shall shield the individual sprinkler heads and shall be removed when the work is completed. If the work extends over several days, the shields shall be removed at the end of each workday.
   f. Adequate ventilation must be used (especially when cutting or welding materials with painted or metal coated surfaces).
   g. Building occupants must be protected or isolated from the “Hot Work” area.
   h. Cracks or holes in floors, walls, and ceilings (including ductwork) must be properly covered or plugged to prevent the passage of sparks to combustible areas.
   i. “Hot Work” equipment is operable and in good repair.
   j. Partitions segregating the “Hot Work” areas from other areas of the building shall be non-combustible. In fixed “Hot Work” areas, the partitions shall be securely connected to the floor so that no gap exists between the floor and the partition. Partitions must prevent the passage of sparks, slag, and heat from the “Hot Work” area.
   k. Any drums, barrels and/or tanks shall be cleaned and purged of flammable and toxic liquids, vapors and solids; all tank feeds shall be closed, and the tank vented.
   l. A conspicuous hazard identification sign must be posted in a visible location to warn others before they enter the “Hot Work” area.
The sign shall have the following warning:

CAUTION!
HOT WORK IN PROGRESS
STAY CLEAR.

See the Alvernia University Safety Technician for signs.

m. A Fire Watch will be implemented if conditions warrant. If no fire hazards or combustible exposures are present, a Fire Watch is not required. If the conditions require a Fire Watch, the Fire Watch shall be in effect during the “Hot Work” operations and for at least 60 minutes after “Hot Work” is complete. The Fire Watch may be extended at the discretion of the City of Reading Fire Marshall.

Conditions requiring a Fire Watch include:

- combustible materials that cannot be removed from within a 35-foot radius of the “Hot Work”
- wall or floor openings within a 35-foot radius of “Hot Work” that expose combustible materials in adjacent areas, including concealed spaces in walls or floors
- combustible materials that are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited

n. The Fire Watch shall include the entire “Hot Work” area.

o. Fire Watch personnel shall carry a flashlight and a cell phone at all times during the Fire Watch period. If signs of fire are noticed, the Fire Watch personnel shall call 911 immediately.

p. Alvernia University employees and Fire Watch personnel will be trained in the use of fire extinguishing equipment (ie. portable fire extinguishers) and how to sound a fire alarm. Training records are maintained by the Alvernia University Safety Technician.

11. When “Hot Work” is complete:

a. The work area and any potentially affected surrounding areas shall be inspected for fire, fire damage or the potential for fire for a minimum of 60 minutes following completion of the “Hot Work”.

b. Smoke / fire alarms that were disabled because of “Hot Work” shall be reactivated.

c. The “Hot Work” permit will be closed out

d. The completed “Hot Work” Permit is to be returned either directly to the Alvernia University Safety Technician or to the Alvernia University Maintenance Supervisor who then submits the completed Permit to the Alvernia University Safety Technician for filing.

F. GAS CYLINDERS

1. Devices or attachments mixing air or oxygen with combustible gases prior to consumption, except at the burner or in a standard torch shall not be allowed unless approved.

2. Storage, handling, and use of compressed gas cylinders, containers, and tanks will be in accordance with the Alvernia University Compressed Gas Cylinder policy.

3. Cylinders, valves, regulators, hoses, and other apparatus and fittings for oxygen shall be kept free from oil or grease. Oxygen cylinders, apparatus and fittings shall not be handled with oily hands, oily gloves, or greasy tools or equipment.
4. The torch valve shall be closed and the gas supply to the torch completely shut off when gas welding or cutting operations are discontinued for a period of one (1) hour or more.

G. PROHIBITIONS

"Hot Work" operations are not permitted

a. In sprinklered buildings while such protection is impaired unless permission is granted by the City of Reading Fire Marshall prior to the start of any "Hot Work"

b. 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

c. In areas where there exists the potential for an explosive atmosphere, such as locations where flammable gases, liquids, or vapors are present

d. In areas with an accumulation of combustible debris, dust, lint and oily deposits

e. In areas near the storage of exposed, readily ignitable materials such as combustibles (i.e. baled paper, dust, loose combustibles)

f. In a confined space, until the confined space has been inspected and determined to be safe.

g. At other locations specified by the City of Reading Fire Marshall unless prior approval has been obtained from the City of Reading Fire Marshall.

H. EMPLOYEE TRAINING

Training must be conducted:

1. For Alvernia University employees assigned to perform “Hot Work” operations
2. Whenever periodic audits reveal deviations from this program are occurring
3. Whenever a near miss, injury or observed deviation from procedure is noted

The video “Compressed Gases: The Correct Way to Use Acetylene and Oxygen” by the Pennsylvania Bureau of Deep Mines will be shown annually to all Alvernia University personnel authorized to perform “Hot Work” operations.

I. RECORDKEEPING

1. The Alvernia University Safety Technician will maintain records of all training documentation for all Alvernia University personnel authorized to perform “Hot Work” operations.
2. The Alvernia University Safety Technician will maintain copies of all completed “Hot Work” Permits.

J. OUTSIDE CONTRACTORS

Outside contractors performing "Hot Work" on the Alvernia University campus are required to have “Hot Work” safety procedures as a part of their project safety programs. Contractors must forward a copy of their "Hot Work" program to the Alvernia University Safety Technician prior to performing any “Hot Work” operations.

K. ALVERNIA UNIVERSITY HOT WORK PERMIT

See attached (Section 3600 Number 2).
L. REFERENCES
1. Code of Federal Regulations, Title 29, Part 1910.252  Welding, Cutting, and Brazing
2. NFPA 51B Standard for Fire Prevention during Cutting, Welding and other Hot Work
3. 2006 International Fire Code Sections 2601 through 2605 Welding and Other Hot Work
4. Fire Marshall Todd Iaeger, City of Reading (PA) Department of Fire & Rescue Services
5. Alvernia University Permit-Required Confined Space Program
6. Alvernia University Lockout-Tagout Program
7. Alvernia University Compressed Gas Cylinder Program
A. ALVERNIA UNIVERSITY “HOT WORK” PERMIT

See attached.
Alvernia University Hot Work Permit

Hot work is any operation that generates heat, spark or open flame. This includes, but is not necessarily limited to welding, cutting, grinding, soldering, torch applied roofing, heat gun use and similar activities.

Date: ___________________ Location: ____________________________________ Work Order No.: __________

Type of Hot Work: ☐ Soldering  ☐ Welding  ☐ Cutting  ☐ Roofing  ☐ Other _____________________________

Pre-Hot Work Checklist to be completed by Safety Technician:

Pre-Hot Work Check List: Check each box where the statement is true. If any statements are not true, then Hot Work may not begin until that issue has been safely resolved.

Required Safety Precautions

☐ Fire suppression sprinklers, fire hoses and/or fire extinguishers are available and operable.
☐ Hot work equipment is operable and in good repair.
☐ Smoke / fire detectors in the immediate area of the hot work have been temporarily disabled until the hot work is complete.
☐ Building occupants have been protected or isolated from the hot work area.
☐ Drums, barrels and tanks have been cleaned and purged of flammables and toxics, all tank feeds are closed, and the tank is vented.
☐ The City of Reading Fire Department has been notified (610-655-6080/610-655-6041)
☐ Fire Watch personnel have been assigned.

Requirements within 35 feet:

☐ Area within 35 feet of the work area has been properly swept to remove any combustible debris.
☐ Flammable and ignitable materials and debris have been moved at least 35 feet from the hot work area or covered and protected with fire resistant materials.
☐ Cracks or holes in floors, walls and ceilings (including ductwork) are covered or plugged.
☐ Combustible floors covered with fire-resistant material.

Requirements within 50 feet:

☐ Explosives, compressed gas cylinders or stored fuel have been moved at least 50 feet from the hot work area or have been protected from the hot work.

Work on walls or ceilings:

☐ Construction is noncombustible and has no combustible covering or insulation.
☐ Areas adjacent to walls being worked on are checked for combustibles and any combustibles are either removed or protected.

Fire Watch required during Hot Work and a minimum of 60 minutes following completion of work.

Yes ______  No ______  Name: __________________________________________

A Fire Watch is needed for all hot work activities unless the hot work area has no fire hazards or combustible exposures. The Fire Watch must have a flashlight, cell phone, and fire-extinguishing equipment readily available and be trained in its use. They must also be familiar with the procedures for sounding an alarm in the event of a fire. The Fire Watch will watch for fires in the exposed areas and must call 911 immediately if a fire is detected. The Fire Watch may be assigned other work duties while in the hot work area, however they need to be vigilant in watching for fires.

When work is completed:

☐ Inspected work area, and any potentially affected surrounding areas, for fire, fire damage, or potential for fire.
☐ Reactivated smoke / fire detectors that were disabled because of the hot work.

I verify that the above location has been examined and the necessary precautions have been taken to prevent the outbreak of fire due to Hot Work.

Safety Technician Signature (issued) ______________________________ Date ______________ Time ____________

Employee Signature (closed) ______________________________ Date ______________ Time ____________

Safety Technician Signature (closed) ______________________________ Date ______________

This permit is only valid for the day issued.