

# Hot Work Safety Procedure

## 1. Purpose

This program is designed to minimize or eliminate fire hazards associated with hot work operations.

## 2. Scope

This program applies to all persons, including contractors, and Arkansas State University units conducting Hot Work, as defined in the terms, on University owned or leased property.

NOTE: Areas permanently established and arranged to conduct ongoing of hot work are exempt.

2.1. Hot work shall not be conducted in any area other than those specifically intended and designed for conducting said work unless the area has been inspected and a Hot Work Permit (See section 3) has been issued to the person(s) who will be conducting the actual work.

2.2. Hot work conducted inside buildings on University-owned property requires notification to the University Police Department prior to the start of work.

2.3. Only approved apparatus such as torches, regulators, pressure reducing valves, acetylene generators, machines, manifolds, cables and hoses in good repair will be used.

- a. Manufacturer's procedures/recommendations will be followed with respect to the sequence of operations for welding, cutting and grinding equipment.
- b. Only acetylene tanks that have been in the vertical position for a minimum of 2 hours will be used.
- c. Torches will be pointed away from people and combustible materials when lighting.
- d. Torches will be lit with a friction lighter or stationary pilot flame. Torches will not be lit from hot metal.
- e. When equipment is not going to be used for periods of 30 minutes or more or when left unattended the equipment will be shut off.
- e. Only people who are trained and proficient will conduct hot work. Trainees may perform work only when their trainer or supervisor is in the immediate area.

2.4. Permits will be approved by Facilities Management only after inspections of the work site have been completed, documentation of inspections have been submitted to appropriate parties (defined below), the area is deemed fire safe and/or the necessary instructions to ensure such safety is provided. Contractors are responsible for inspections on construction sites.

- a. Once the permit is approved, it will be delivered to the job site where it will be made readily available for inspection purposes. Facilities Management will maintain a copy for record-keeping purposes.
- b. If in the inspector's opinion the area is not safe, work will be postponed until such time as the area is made safe.
- c. The University Safety department or appointed representative can also authorize permits in the event an inspector can not be reached and respond in a reasonable amount of time.
- d. In situations, where delaying work, for the arrival of an inspector, would allow, or increase damage to University property or critical research project, the individual performing the hot work shall ensure the area is fire safe then proceed.
- e. The signed permit authorizing the work will be readily available in the immediate area where the hot work is being conducted.
- f. Permits for small projects and spot work will generally be issued for a period of twelve hours only. However, in areas where the work will be ongoing for an extended period of time, permits can be issued for periods not to exceed seventy-two hours as long as the work or situational factors do not change.
- g. Permits for closed construction sites with restricted public access can be issued for the duration of the project, provided inspections are conducted to ensure the area where hot work is performed is fire safe. Inspections must be documented and records must be retained on the job site.

2.5. Where sprinkler protection exists it will be fully operational while hot work is being performed and the proper fire extinguishing equipment will be readily available.

- a. If hot work is to be done within 3 feet of automatic sprinkler heads, noncombustible sheet material or damp cloth guards will be used to temporarily shield the individual heads. The inspector conducting the pre-work inspection will specify when issuing the permit.
- b. Hot work will not be conducted in buildings with installed sprinkler systems when the system is inoperable, unless other means of fire detection, reporting and extinguishing have been approved by the City Fire Marshal.
- c. Smoke detectors in the immediate area may be bagged per the instructions of the inspector in order to prevent contamination of the head and reduce nuisance alarms. This will also, leave as much of the fire detection system as intact as possible to detect abnormal conditions in other parts of a facility.
- d. When a detector is bagged the personnel performing the work necessitating the bagging will remove the bag immediately after finishing the work. If work will extend throughout an entire day or following days the bags will be removed any time the personnel conducting the work will be gone for 30 or more minutes.

2.6. When it is necessary to conduct hot work in a confined space, permits will not be approved unless the University Safety office has approved entry into the area.

a. When working in a confined space the equipment shall be positioned outside the confined space in such a manner that it will not interfere with egress.

2.7. Where possible all combustible materials located within 35 feet of the operation (example: items that still contain or have contained explosive hydrogen gas, etc.) will be removed.

a. Hot work will never be conducted within 50 feet of flammable liquids (flashpoint below 100 degrees Fahrenheit (F)).

b. Whenever there are cracks or other floor openings that can not be closed or covered within 35 feet of the hot work precautions may be directed by the inspector, dependent on the situation, to remove or otherwise protect combustible materials on the floor below that may be exposed to sparks. The same precautions will be observed with regard to cracks or openings in walls, open doorways, and open or broken windows.

c. Combustible floors and other interior finishes will be kept wet or protected by fire resistant shielding. Where floors have been wet down or shielding put down rigid control will be exercised over the grounding of equipment. In addition, personnel shall be protected from possible shock. Caution will be exercised against slips and falls on any wet surfaces.

2.8. A fully charged and operable fire extinguisher(s), appropriate for the work will be kept in the immediate work area at all times while hot work is in progress. Note: Fire extinguishers will not be considered immediately accessible if located at distances greater than 15 feet from hot work or where obstacles impede access to the extinguisher.

2.9. Fire watcher(s) procedures will be implemented whenever hot work is being conducted within 35 feet of combustible materials, regardless of the protection provided. A qualified person proficient in the operation of available fire extinguishing equipment and knowledgeable of emergency reporting procedures will observe the hot work area. Their responsibility is to detect and prevent the spread of fire produced by the hot work. An additional fire watcher may be required to observe areas that are hidden from the view of a single fire watcher (other side of partition, walls, ceilings, etc).

a. A fire watch shall be maintained for at least 30 minutes following the completion of the hot work to detect and extinguish possible smoldering fires.

2.10. When hot work is to be conducted in outside areas, the work should be moved to a fire safe area. If this is not possible the area will be made fire safe by removing or protecting the combustibles from ignition sources.

2.11. When hot work is conducted in public areas or where the work is in view of the public, welding curtains will be used.

2.12. All work using asphalt or tar kettle(s) will comply with the State Building Code, Arkansas Fire Prevention Code and National Fire Protection Association Standards 1, 29, 51B, and 241.

### 3. TERMS

3.1. **Fire safe** - No threat of fire

3.2. **Fire watch(er)** - A person assigned to work with a welder, normally outside an authorized area to watch for fires resulting from hot work. Fire watchers will have fire extinguishing equipment readily available and be trained in its use. They will be familiar with the location of and the use of the nearest fire alarm or means to notify the fire department. They should attempt to extinguish fires only when obviously within the capacity of their equipment; or otherwise sound the alarm. A fire watcher should have no other duties except to watch for signs of fire during the operation and the 30 minutes following.

3.3. **Hot work** - Hot work is considered welding, soldiering, cutting, brazing, grinding, use of asphalt / tar kettle(s), or other work that might create sufficient heat or spark which could start a fire.