HOT WORK PROGRAM AND OPERATIONAL GUIDELINES

Applicable Regulations:

- NC OSH Standard for General Industry 1910.252
- NC Fire Prevention Code Chapter 26
- NFPA 51B

This program guide is provided as a general guideline for hot work operations and does not cover all code compliance issues. If you have any questions or concerns, or need additional information contact the ASU Safety & Workers' Compensation Office at (828) 262-4007 or e-mail clarkbs@appstate.edu.

1.0 INTRODUCTION

1.1 Purpose: This program is designed to recognize the potential fire and explosion hazard and to minimize or eliminate fire hazards associated with hot work operations.

1.2 Scope: This program applies to all ASU employees conducting hot work, on University owned or leased property. NOTE: This program is not intended for use in areas specifically intended and designated for conducting hot work.

Hot work is defined as: Operations including cutting, welding, thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar situation.

Fire watch is defined as: Trained personnel who continuously patrol the effected area. Personnel should have immediate access to fire extinguishers and the ability to promptly notify University Police if needed. During the patrol of the area, the person(s) should not only be looking for fire, but making sure that the other fire protection features of the building such as egress routes and alarm systems are available and functioning properly.

2.0 HOT WORK PROCEDURES

2.1 When it is necessary for an employee to perform any work such as welding, soldering, cutting, brazing, heating metal, etc., he/she is required to obtain a Hot Work Permit. The permit will only be valid until completion of the job. Each new job will require a new permit.

2.2 Hot Work Permits will be issued by the supervisor or designee and signed accordingly. After the permit precautions have been initiated and completed, the permit will be posted in the work area. At the completion of the work the permit will retained in the departmental files for a period of one year.

2.3 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 has been issued to the person(s) who will be conducting the actual work.
2.4 Responsibilities:

It is the responsibility of the employee(s) conducting Hot Work and their supervisor(s) to ensure fire protection and prevention procedures are applied to all Hot Work operations.

2.5 Prior To Hot Work

Several tasks will be performed prior to hot work. These include, but are not limited to:

2.5.1 Remove all sources of ignition (combustible and flammable materials) within a 35 foot radius of the work area/hazard zone. Ensure that the area is free of debris and that flammable liquids or vapors, lint, dust, or combustible materials/storage are not at risk of ignition from sparks or hot metal. If all fire hazards cannot be removed or relocation is impractical, then appropriate shielding or covers shall be provided to prevent sparks, slag, or heat from igniting fire hazards.

2.5.2 Areas that will be exposed to sparks, hot slag, radiant or convective heat as a result of the Hot Work must be inspected prior to starting work to ensure the following:

(a) Openings or cracks in walls, floors, ducts or shafts within 35 foot from the operation must be tightly covered to prevent passage of sparks or slag.

(b) If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire-retardant shields or guards shall be provided to prevent ignition.

2.5.3 If hot work is done on one side of a wall, partition, ceiling, or roof, one of the following criteria shall be met:

(a) Precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles.

(b) If it is impractical to relocate combustibles, a fire watch shall be provided on the side opposite from where the work is being performed.

2.5.4 Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.

2.5.5 Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles, shall not be undertaken if the work is close enough to cause ignition by conduction.
2.5.6 Hot work shall not be permitted in the following situations:

1. In areas not authorized by management
2. In sprinklered buildings where sprinklers are impaired
3. In the presence of explosive atmospheres (i.e., where mixtures of flammable gases, vapors, liquids, or dusts with air exist)
4. In the presence of uncleaned or improperly prepared drums, tanks, or other containers and equipment that have previously contained materials that could develop explosive atmospheres
5. In areas with an accumulation of combustible dusts that could develop explosive atmospheres.

2.5.7 Where sprinkler protection exists it will be fully operational while hot work is being performed. 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. Smoke detectors in the immediate area may be bagged in order to prevent contamination of the head and reduce nuisance alarms. When a sprinkler or detector head is covered or bagged the personnel performing the work necessitating the covering/bagging will remove the cover/bag immediately after finishing the work. If work will extend throughout an entire day or following days the covers/bags will be removed any time the personnel conducting the work will be gone for 30 or more minutes.

2.5.8 Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area.

2.5.9 The employees and/or supervisor shall be responsible for notifying appropriate department/building personnel where hot work will be conducted.

2.6 During And After Hot Work:

2.6.1 The hot work operator shall handle equipment safely and use it as follows so as not to endanger lives and property:

2.6.2 Only approved apparatus such as torches, regulators, pressure reducing valves, acetylene generators, machines, manifolds, cables and hoses in good repair will be used. Equipment must be inspected by the operator prior to use.

2.6.3 Appropriate personal protective equipment such as goggles, shields, helmets, etc. shall be utilized by the operator(s).

2.6.4 Adequate ventilation shall be provided during hot work operations.

2.6.5 Appropriate shielding shall be provided to protect non-workers from exposure to arcs, slag, etc.

2.6.6 The operator shall cease hot work operations if unsafe conditions develop and shall notify management, or the area supervisor for a re-assessment of the situation.
2.6.7 A fire watch shall be provided during Hot Work activities, during lunch or rest periods and shall continue for a minimum of 30 minutes after the conclusion of the operation. Individuals designated for the fire watch shall have fire-extinguishing equipment readily available and must be trained in use and capabilities of such equipment as well as potential fire hazards associated with hot work activities. Individuals conducting a fire watch shall ensure that safe conditions are maintained during hot work operations. The individual conducting the fire watch shall have the authority to stop the hot work operations if unsafe conditions develop. The individual conducting the fire watch shall be familiar with the facilities, procedures for sounding an alarm and contacting emergency personnel in the event of a fire.