



**WAGNER-MEINERT LLC**  
*Engineers – Contractors*

## **HOT WORK PERMIT PROGRAM (Section 6)**

### **PURPOSE:**

The purpose of this procedure is to ensure that the employees of Wagner-Meinert, LLC, sub-contractors, company property, and host company property are properly protected against fire, explosion, and other dangers resulting from hot work (cutting and welding).

### **SCOPE:**

The procedure covers any oxygen fuel gas and electric arc cutting and welding operation that could become a source of ignition in a hazardous area. The procedure applies to all employees and contractors working in the facility. If hot work includes hot tapping, the procedures and precautions are to be approved by the Project Manager and Safety Director.

### **DOCUMENTS**

<b>Appendix 6A</b>	<b>Hot Work Permit</b>	<b>(Page 10-11)</b>
<b>Appendix 6B</b>	<b>Hot Work Definitions</b>	<b>(Page 12)</b>

### **RELATED DOCUMENTS**

**Lockout/Tagout Program**  
**Confined Space Program**

### **REFERENCE:**

- A) 29 CFR 1910.119 Process Safety Management of Highly Hazardous Chemicals; Explosives and Blasting Agents, Paragraph (k).
- B) Part 1926.350--Safety And Health Regulations For Construction
- C) 29 CFR 1910.252 (a) Welding, Cutting & Brazing--General Requirements.

- D) NFPA 51, Standard for the Design and Installation of Oxygen Fuel Gas Systems for Welding, Cutting and Allied Processes.
- E) NFPA 51B, Standard for Fire Prevention in Use of Cutting and Welding Processes.
- F) ANSI Z491, American National Standard Safety in Welding and Cutting.
- G) API 2201, Procedures for Welding or Hot Tapping on Equipment Containing Flammables.

## **PROCEDURES:**

- 1.0 COORDINATION WITH HOST EMPLOYER**
- 2.0 INITIATING A HOT WORK PERMIT**
- 3.0 ISSUING A HOT WORK PERMIT**
- 4.0 PERFORMING HOT WORK**
- 5.0 COMPLETING THE HOT WORK PERMIT PROCEDURE**
- 6.0 PERSONNEL RESPONSIBILITIES**

Several different persons and departments may also be involved. The following information describes the responsibilities at various levels in the organization for the major steps in the hot work permit procedure.

### **1.0 COORDINATION WITH HOST EMPLOYER**

1.1 When employees of Wagner-Meinert LLC are to work in facilities containing hot work permit program that are controlled by the host employer, the authorized representative of Wagner-Meinert LLC shall coordinate all hot work permit program requirements with a properly authorized representative of the host employer. As a minimum, the following information shall be exchanged/determined:

1.1.1 The host employer shall appraise the Wagner-Meinert LLC representative of all elements including the hazards identified in the hot work permit area.

1.1.2 Any precautions or procedures that have been implemented by the host employer for the protection of their employees in or near the affected hot work area where employees of Wagner-Meinert LLC will be working.

1.1.3 Communicate all hot work permit program operations to protect both the host employer employees and employees of Wagner-Meinert LLC or employees of other contractors who are working near the hot work permit area.

- 1.1.4 The authorized representative of Wagner-Meinert LLC shall obtain from the host employer any available information regarding the host employer hot work permit program. Further, the authorized representative of Wagner-Meinert LLC shall provide a copy of the Wagner-Meinert LLC hot work permit program to the host employer for their review and approval before any hot work permit program operation is performed by any employee of Wagner-Meinert LLC or subcontractors employed by Warner-Meinert LLC. Approval to use the Wagner-Meinert LLC hot work permit program as is, or as modified by special requirements of the host employer, shall be in writing and shall be signed by an authorized representative of the host employer.
- 1.1.5 The authorized representative of Wagner-Meinert LLC shall debrief the host employer at the conclusion of hot work permit operations.
- 1.1.6 First Aid equipment shall be located near the work area. All personnel involved in the hot work operation must be educated as to the location and use of first aid equipment prior to the commencement of the hot work operation.
- 1.1.7 All welders assigned to operate or maintain equipment must meet the specific requirements of welding provisions outlined in state and local code, as well as 1910.252, 1910.254, and certified through the provisions of the Plumbers and Pipe fitters union.
- 1.1.8 All equipment which may be used during the hot work permit operation must be inspected and maintained per the manufacturer's recommendations. Faulty equipment shall be marked and immediately removed from service.

## **2.0 INITIATING A HOT WORK PERMIT**

- 2.1 The first step in the hot work permit procedure is the identification of the need for a hot work permit. The request for a hot work permit may be made by any facility employee, WMI employee or by any outside contractor, if they feel that an operation presents an unusual hazard which requires special safety precautions. Bear in mind that a hot work permit is required for any operation that could cause a source of ignition in a hazardous area. The request for a hot work permit should be submitted (verbally or in writing) to the site maintenance Supervisor/Foreman on the day that the hot work is to be performed.

## **3.0 ISSUING A HOT WORK PERMIT**

- 3.1 The site maintenance Supervisor/Foreman (or his/her designee) has the responsibility to fill out the hot work permit (see *Form*) once a request for a hot work permit is made. The permit should be filled out before the hot work is

started. The site maintenance Supervisor/Foreman should inspect the work area before filling out the hot work permit.

- 3.2 Section 1 of the hot work permit should show the date and time that the work will be performed, the location, a short description of the work to be performed, the name of the cutter/welder, and the name of the fire watch (if one is required). A fire watch is required in locations where a minor fire might develop, where there are wall or floor openings within 35 feet, or where there is a presence of combustible material within 35 feet of the hot work (29 CFR 1910.252 (a)). The hot work permit is valid only for the job and the time listed in this section. It is suggested that the hot work permit should be valid for no longer than an eight hour shift, but may have a shorter valid period.
- 3.3 The next step is for the site maintenance Supervisor/Foreman to review the list of hot work precautions with the cutter/welder and with the fire watch (see *Form*). These precautions are summarized in checklist form on the hot work permit (see Section 2 of Form), posted in the maintenance shop, and to be posted on the equipment where the work is to be performed. Note that the hot work precautions outlined in Section 2 of the form are minimum precautions; additional measures for safety of personnel or property may be taken by the site maintenance Supervisor/Foreman as deemed necessary.
- 3.4 After the site maintenance Supervisor/Foreman is assured that all necessary hot work precautions have been taken, he/she should initial each item in Section 2 of the permit, sign the permit, and then issue it to the cutter/welder. The cutter/welder and the fire watch should sign Section 1 indicating that they have reviewed the hot work precautions with the Supervisor/Foreman and understand their responsibilities. Site maintenance Supervisor/Foreman should make and keep a copy of the permit.

#### **4.0 PERFORMING HOT WORK**

- 4.1 The cutter/welder should affix the hot work permit and the hot work precautions to a visible place in the work area. The permit should remain in this place until the hot work is completed. The cutter/welder is responsible for conducting the hot work within the authorized parameters and time limit set by the permit. Hot work may continue as long as conditions remain safe and no new hazards (such as ammonia leaks) have been introduced.
- 4.2 The following precautions should be taken when performing any hot work operations at our job sites.
  - 4.2.1 Perform hot work in the maintenance shop except when the job cannot be moved to the shop.
  - 4.2.2 Use only equipment that is in good condition. Valves, regulators, hoses and torches should be thoroughly checked.

- 4.2.3 Do not perform portable welding, cutting, or other hot work equipment in a building where sprinklers are out of service.
- 4.2.4 Move combustibles at least 35 feet from hot work operations. If combustibles cannot be moved, they should be protected by metal guards or by flame proof curtains or covers rather than by ordinary tarpaulins.
- 4.2.5 Do not perform hot work in or on any vessels containing flammable or combustible materials (includes ammonia) including residues, until they have been disconnected or blanked, completely cleaned out, and purged. Safe Work Practices for Opening of System should be adhered to.
- 4.2.6 Check the atmosphere for combustible gases or vapors, where necessary, using reliable combustible gas (ammonia) detection equipment. If there is a chance of gas release during hot work operations, continuous-duty portable combustible gas detectors should be used to continuously monitor the area.
- 4.2.7 Ensure that a fire extinguisher, a small hose and/or bucket of sand are readily available for instant use in the area.
- 4.2.8 Do not perform hot work until surrounding floors have been swept clean, and, if combustible, wet down with water.
- 4.2.9 Do not perform hot work until all wall and floor openings within 35 feet of the operations have been tightly covered or otherwise protected with metal guards or flame proofed tarpaulins.
- 4.2.10 Do not perform hot work until a fire watch has been assigned to watch for dangerous sparks in the area and on floors above and below the operation.
- 4.2.11 Properly secure gas cutting and welding cylinders when storing, transporting, or moving so they will not be damaged. Replace protective caps (and closed gas supply valves) on all cylinders when not in use. Oxygen cylinders shall be stored in an upright secured position 20 feet from any flammable gases or petroleum products.
- 4.2.12 Carefully and securely connect the ground clamp when using electrical arc welding equipment. Since improperly made ground can be a source of ignition, the ground clamp should be connected as close to the work as possible so that it may easily be observed.
- 4.2.13 Use portable stands to elevate welding hose or cable off floor areas to avoid damage to the hose or cable.
- 4.2.14 Ensure adequate ventilation is maintained during hot work operations to assure that personnel are not exposed to harmful fumes. This may

include positioning of an exhaust blower close to the point of the exhaust fumes. Respiratory protection should also be considered.

- 4.2.15 Remove all electrodes from the holders, carefully locate them so that accidental contact cannot occur, and disconnect the welding machine from the power source if hot work is to be suspended for any substantial period (e.g., lunch or overnight).
- 4.3 The fire watch shares the responsibility for fire/safety with the cutter/welder. The fire watch should maintain a constant vigil during the operation (including lunch and coffee breaks) to watch for stray sparks, ignition sources, or other fire hazards. This individual should be specifically trained in the use of a fire extinguisher, small hose and/or bucket of sand and should stay with this equipment. He/she should be familiar with the facilities and also know how to sound the fire alarm. It is the fire watch's responsibility to try to extinguish any fires if they occur, as long as they are within the capacity of the equipment available, or otherwise sound the fire alarm.
- 4.4 The site maintenance Supervisor/Foreman should inspect the work area during the hot work operations to ensure that the conditions of the hot work permit are being fulfilled.

## **5.0 COMPLETING THE HOT WORK PERMIT PROCEDURE**

- 5.1 When the hot work is completed, the cutter/welder and the fire watch should remain for at least another 30 minutes, carefully inspecting the work area and adjacent areas for the possibility of any smoldering fires. This inspection extends to floors above and below the work area and to adjacent rooms.
- 5.2 Barring any fires, the cutter/welder then removes the hot work permit. The cutter/welder should sign Section 3 of the permit, write the completed time and then return the permit to the site maintenance Supervisor/Foreman.
- 5.3 The site maintenance Supervisor/Foreman, the cutter/welder, or the fire watch should return to the area two to four hours later; smoldering fires may take that long to become apparent. After this final inspection, the site maintenance Supervisor/Foreman should sign Section 3 of the hot work permit, write the time the system was inspected, and retain the permit in the maintenance files as a record of the work.

## **6.0 PERSONNEL RESPONSIBILITIES**

- 6.1 The following describes the various persons/departments who may be involved in the hot work permit procedure, and summarizes their responsibilities.

### **6.1.1 Originator**

- A. Identifies the need for a hot work permit;

- B. Submits hot work permit request (verbally or in writing) to site maintenance Supervisor/Foreman; and
- C. Works with other departments, as assigned, during the implementation of the hot work permit procedure.

#### **6.1.2 Site Supervisor/Foreman**

- A. Has overall responsibility for ensuring that the hot work permit procedure is followed at our job site.
- B. Inspects the work area before filling out the hot work permit;
- C. Makes a determination as to whether a fire watch is necessary;
- D. Completes Sections 1 and 2 of the hot work permit after completing inspection of work area;
- E. Reviews the list of hot work precautions with the cutter/welder and the fire watch;
- F. Specifies any additional precautions which may be necessary for the hot work permit;
- G. Signs the hot work permit and issue it to the cutter/welder when assured that all necessary hot work precautions have been taken;
- H. Inspects the work area during the hot work operations to ensure that the conditions of the hot work permit are being fulfilled;
- I. Returns to the hot work area (or direct cutter/welder or fire watch to return to the area) two to four hours later to inspect for smoldering fires; and,
- J. Signs Section 3 and file the hot work permit after the final site inspection has been completed.

#### **6.1.3 Cutter/Welder**

- A. Reviews the list of hot work precautions with the site maintenance Supervisor/Foreman and sign Section 1 of the permit;
- B. Affixes the hot work permit and the hot work precautions to a visible place in the work area;
- C. Conducts the hot work operations within the authorized parameters and time limit set by the hot work permit;

- D. Stops hot work operations if any new hazards are introduced to the process;
- E. Remains in the area for 30 minutes after work is completed, carefully inspecting the work area and adjacent areas for any smoldering fires;
- F. Signs and return the hot work permit to the site maintenance Supervisor/Foreman after the 30 minute inspection; and,
- G. Returns to hot work area two to four hours later to inspect for smoldering fires if instructed to do so by the site maintenance Supervisor/Foreman.

#### **6.1.4 Fire Watch**

- A. Reviews the list of hot work precautions with the site maintenance Supervisor/Foreman and sign Section 1 of the permit;
- B. Maintains a constant vigil during the hot work operations (including lunch and coffee breaks) to watch for stray sparks, ignition sources, or other fire hazards;
- C. Ensures that a fire extinguisher, a small hose and/or bucket of sand are readily available for instant use in the area;
- D. Stops hot work operations if any new hazards are introduced to the process;
- E. Extinguishes any fires if they occur as long as they are within the capacity of the equipment available, or otherwise sound the fire alarm;
- F. Remains in the area for at least 30 minutes after work is completed, carefully inspecting the work area and adjacent areas for any smoldering fires; and,
- G. Returns to hot work area two to four hours later to inspect for smoldering fires if instructed to do so by the site maintenance Supervisor/Foreman.

### **7.0 HOT WORK IN CONFINED SPACES**

- 7.1 See 04 WMI-Permit Required Confined Space Entry Program section 7.2.1 on page 12 for permit for Hot Work in confined spaces.

### **8.0 EQUIPMENT MAINTENANCE**

- 8.1 All Equipment must be good working order. Any equipment associated with hot work will be inspected daily on the job site. Any deficient equipment will tagged out of service until repaired or replaced.

## **DOCUMENT MANAGEMENT:**

The only document associated with hot work permit procedures is the permit itself. Documentation should be managed as follows:

### Hot Work Permit

Site Supervisor/Foreman (or designee) retains the supply of blank permits or copy Appendix 6A. Upon request he/she fills out Sections 1 and 2 of the permit and signs it to authorize the work. The permit may then be signed by the cutter/welder and one copy of both sides of the permit is made. Maintenance Supervisor/Foreman retains the copy and cutter/welder takes the original to the job site where it is posted. Upon successful completion of the work the Supervisor/Foreman or Fire Watcher (if needed) signs Section 3 of the permit. The completed permit is then filed as follows:

Original - Host Supervisor/Foreman

Copies - Job Site Foreman

If after reading this program, you find that improvements can be made, please contact the Safety Director. We encourage all suggestions because we are committed to the success of our written Hot Work Permit Program. We strive for clear understanding, safe behavior, and involvement from every level of the company.

## **CHANGE CONTROL:**

All management system changes are reviewed, approved or disapproved by the Safety Committee.

This program was initially developed on September 13, 2000, replacing the former Hot Work Permit Program entirely.

Revision No. 1 (September 13, 2000)  
Revision or Review No. 2 (January 15, 2001)  
Revision or Review No. 3 (January 10, 2002)  
Revision or Review No. 4 (January 11, 2003)  
Revision or Review No. 5 (January 15, 2004)  
Revision or Review No. 6 (January 10, 2005)  
Revision or Review No. 7 (January 3, 2006)  
Revision or Review No. 8 (June 26, 2006)  
Revision or Review No. 9 (September 6, 2007)  
Revision or Review No. 10 (October 10, 2011)

**PERSONNEL:**

The Owners of Wagner-Meinert, LLC have the ultimate responsibility for the Hot Work Permit Program. They have designated the Safety Director to manage the Hot Work Permit Program.

**HOT WORK PERMIT FOR CUTTING AND  
WELDING WITH PORTABLE GAS OR ARC  
EQUIPMENT (APPENDIX 6A)  
Post at Work Area**



SECTION 1

Issued By:

Date:

Permit Expires:

Building:

Work Dates:

Dept.:

Floor:

Work to be Done:
Type of Work: <input type="checkbox"/> Cutting <input type="checkbox"/> Welding <input type="checkbox"/> Retrofit <input type="checkbox"/> New
Work Performed By: <input type="checkbox"/> In House People <input type="checkbox"/> Outside Contractor(s)
Cutter/Welder Name:

Is work to be done on ammonia refrigeration piping or equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is fire watch required? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, Name:
Is there overhead work? <input type="checkbox"/> Yes <input type="checkbox"/> No
Relocation of combustible materials? <input type="checkbox"/> Yes <input type="checkbox"/> No
Protective covering used? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is there equipment to convey sparks? <input type="checkbox"/> Yes <input type="checkbox"/> No
Type of fire extinguisher required. <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> ABC
Was training required? <input type="checkbox"/> Yes <input type="checkbox"/> No
If so what type of training?
Describe precautions required with any combustible materials:
<input type="checkbox"/> Floors?
<input type="checkbox"/> Walls?
<input type="checkbox"/> Ceilings?
<input type="checkbox"/> Roof?
<input type="checkbox"/> Atmosphere?

**SECTION 2**

**ATTENTION**

Before approving any cutting and welding permit, the fire safety Supervisor/Foreman or his appointee shall inspect the work area and confirm that precautions have been taken to prevent fire in accordance with Hot Work Procedures, OSHA's 1910.252(a), Part 1926.350--Safety And Health Regulations For Construction

Part 1926.350 and the National Fire Protection Association's standard 51B, Cutting & Welding Processes.

**PRECAUTIONS**

- Sprinkler in service.
- Cutting and welding equipment in good repair.

**WITHIN 35 FT. OF WORK AREA**

- Floors swept clean of combustibles.
- Combustible floors wet down, covered with damp sand, metal or other shields.
- No combustible material or flammable liquids.
- Combustible and flammable liquids protected with covers, guards or metal shields.
- All wall and floors openings covered.
- Covers suspended beneath work to collect sparks.

**WORK ON WALLS OR CEILINGS**

- Construction noncombustible and without combustible covering.
- Combustibles moved away from opposite wall.

**WORK ON ENCLOSED EQUIPMENT**

(Tanks, containers, piping, ducts, dust collectors, etc.)

- Equipment cleaned of all combustibles.
- Opening of ammonia refrigeration systems practices followed.
- Containers properly purged of flammable liquid and vapors.

**FIRE WATCH**

- To be provided during and 30 minutes after operation.
- Supplied with fire extinguishers and small water hose.
- Trained in use of equipment and in sounding fire alarm.

**SECTION 3**

**FINAL CHECK-UP**

Work area and all adjacent areas to which sparks and heat might have spread (including floors above and below and on opposite sides of walls) were inspected 30 minutes after the work was completed and were found fire safe.

The location where the work is to be done has been examined, all necessary precautions taken and permission is granted for this work.

Site Inspection Date/Time:

Issued By:

Contractor:

Fire Watcher:

THIS FORM SHOULD BE KEPT ON FILE FOR 30 DAYS AFTER ALL WORK IS COMPLETED.

# HOT WORK DEFINITIONS (APPENDIX 6B)



## DEFINITIONS:

The following is an alphabetical listing defining terms and abbreviations as used throughout this document with which a user of this procedure should be familiar. Where applicable, examples are given in order to provide clarification. These examples are intended to show typical issues which may arise when following the hot work permit procedure. These issues are not intended to be an all encompassing list within the scope of this procedure. Rather, it is intended to provide guidance when issuing the hot work permits.

- Catastrophic Release:** A major release of ammonia resulting from uncontrolled developments which leads to, or could have led to, serious danger to persons both within and outside the work place.
- Cutter/Welder:** The individual performing the hot work operations.
- Fire Watch:** A fire watch is required in locations where a minor fire might develop, where there are wall or floor openings within 35 feet, or where there is a presence of combustible material within 35 feet of the hot work. The fire watch shares the responsibility for fire/safety with the cutter/welder. The fire watch should maintain a constant vigil during the operation (including lunch and coffee breaks) to watch for stray sparks, ignition sources, or other fire hazards. This individual should be specifically trained in the use of a fire extinguisher, small hose and/or bucket of sand and should stay with this equipment. He/she should be familiar with the facilities and also know how to sound the fire alarm.
- Hazard:** A potential for an accident with undesirable consequences, usually involving a loss of containment of flammable, combustible, highly toxic (i.e., ammonia) or reactive materials.
- Hazardous Location:** A hazardous location is one where flammable gases, vapors, or combustible dust are (or may be) present in the air in sufficient quantities to provide a fire or explosion.
- Hot Work Operations:** Any operation that could cause a source of ignition in a hazardous area. A hot work permit is required for any hot work operations.
- Process:** All activities that involve the receipt, storage, handling, compression, or movement of ammonia, including utility systems, required for the safe operation of the ammonia facility.
- Source of Ignition:** A source of ignition is a flame, tool spark, static electric charge, or electric spark that would cause a fire or explosion.

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