

HOT WORK PROGRAM

DID YOU KNOW....?

- Between 2009-2013, Hot Work was directly responsible for
 - 8.26% of all fires and
 - Resulted in approximately \$10 million in damage.

WHAT IS HOT WORK...?

- any *temporary* or *permanent* operation that produces flames, sparks, or heat, such as:
- Work involving electric or gas welding, cutting, brazing or similar flame or spark-producing operation



WHAT IS HOT WORK...?

- cutting
- welding
- brazing
- grinding
- sawing
- soldering
- thawing frozen pipes
- applying roof coverings
- sealing plastic shrink-wrap by torch,
- & using a plumber's torch
- Any type of work that creates sparks...

FIRST OFF, ARE THERE OTHER OPTIONS? WHAT ABOUT:

- mechanical bolting vs. welding
- manual hydraulic shears vs. saw/torch cutting
- hand filing vs. grinding
- install threaded pipe vs. welded or soldered (does local code permit?)
- avoid the use of torches!

IF HOT WORK IS YOUR ONLY OPTION...

- Where can you do this hot work? Anywhere you want?

NO

DESIGNATED HOT WORK AREAS:

- PFW personnel have identified certain locations where their department is allowed to do Hot Work without the requirement of a *Hot Work Permit*;
- For a current list of these designated areas, please contact REM at 260-481-5744 or 260-481-4193



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DESIGNATED HOT WORK AREA REQUIREMENTS:

- sprinkler and/or fire extinguisher in good condition
- hot work equipment must also be in good condition
- 35 feet clearance of combustible materials
- fire watch provided during and for 60 mins. after work finished
 - Longer if deemed necessary

HOT WORK AREA SIGN

- All Designated Hot Work Areas have signs posted!



HOT WORK AREA

- If Hot Work cannot be done in a Designated Area, a Hot Work Permit must be obtained...

HOT WORK PERMIT

- Required for *temporary* (≤ 8 hours) hot work done in non-designated areas
- Follow all “Required Precautions” written on the Permit
- Contact supervisor or REM for final Permit review and approval
- Permit must be posted at the work area for duration of job
- Upon completion of job, submit Permit to REM for record keeping

AIG HOT WORK PERMIT

- Signatures are needed from Person Issuing Permit, Person Doing Hot Work, and Fire Watch
- Instructions are provided on Part 1 and Part 2
- Any questions about completing the permit, contact your supervisor or REM

Global Property - Loss Prevention Engineering

HOT WORK PERMIT PART 1 AIG

Can the work be completed using a different method or at a less hazardous location, such as the maintenance shop, which would not require the use of a hot work permit?

Permit Number: 403312

Hot Work Being Conducted by:

Employee: _____

Contractor: _____

Issue Date: _____

Job, Task or PO #: _____

Location, Bldg & Floor: _____

Nature of Task: Cutting Welding
 Brazing Grinding Soldering
 Thawing Pipe Torch Applied Roofing
 Other _____

The location where this work is to be done has been examined and necessary precautions have been taken. Permission is hereby granted for this work.

Name of Person Issuing Permit: _____

Signed: _____

Permit Expires _____

Date _____ Time _____ AM PM

Extended Fire Watch
 Extended Fire Watch Required Yes No
 Extended Fire Watch Duration _____ hours

Instructions:

1. Verify that all applicable precautions have been implemented and that the site is safe for hot work.
2. Part 1 (first page) should be completed and retained for records.
3. Issue Part 2 to individual(s) conducting the hot work and see additional instructions on Part 2.
4. Important note: The facility should follow the guidelines listed on this form or those required by local jurisdiction, if more stringent.

Required Precautions Checklist

Review of the operations / tasks have been conducted and temporary Management of Change issued as necessary.

Work permits or line cutting permits have been reviewed and issued as necessary.

Sprinkler protection, hose streams and fire extinguishers are in service and operational.

Hot work equipment is in good repair and secured as necessary.

Within 35 ft (10 m) of task area(s)

Floors have been swept clean of combustibles.

Flammable liquids, combustible liquids, combustible dust, lint and oil deposits have been removed.

Eliminate explosive atmosphere.

Combustible floors have been wet down or covered with damp sand, metal or other noncombustible shields.

Combustible materials have been removed or protected with fire resistive tarpaulins or metal shields.

All wall and floor openings have been covered.

Fire resistive tarpaulins have been suspended beneath the work to collect sparks.

Work on Walls or Ceilings

Construction is noncombustible and without combustible coverings or insulation.

Combustibles have been removed away from opposite side of wall or ceiling.

Work on Enclosed Equipment

Equipment has been cleaned of all combustibles.

Containers have been purged of flammable, combustible liquids, vapors or gases.

Pressurized vessels and piping have been removed from service, isolated and vented (LOCK OUT TAG OUT).

Equipment with stored energy or electrical energy has been removed from service and isolated (LOCK OUT TAG OUT).

Fire Watch

Fire watch will be provided during the task and for a minimum of 1-hour after the task has been completed or for the extended fire watch duration.

Fire watch has been trained in the use of area provided with portable fire extinguishers or charged fire hose line(s).

Fire watch is posted on lower floors if an opening exists that would allow sparks or embers to drop down.

Fire watch is trained on how to properly report a fire alarm via the plant fire alarm procedures or fire alarm system.

Hot work area will be monitored for 3 hours after the job is finished.

The permit does not protect you or both all hot work nor to indicate that other hazards do not exist. By providing this permit, neither AIG nor any of its employees make any warranty, express or implied, concerning the use of this permit. Furthermore, neither AIG nor any of its employees shall be liable in any manner for any liability that may be assessed in any policy or insurance that may be issued by the Company for personal injury or property damage or loss of any insurable item or connected with the permit. Form 013 (10/2013)

- The Person Issuing the Permit will sign the Hot Work Permit twice
 - Once when the permit is requested
 - Second on Part 2 when the Hot Work and Fire Watch are complete

35 FOOT RULE

- Shield combustible flooring with wet sand, AIG-Approved welding blankets
- Clean up the area, especially of oily deposits and trash
- Cover any combustibles that cannot be moved with AIG-Approved welding blankets
- Block off any duct openings
- Cover or fill any openings in exposed walls, floors and ceilings with AIG-Approved fire-stop material
 - Contact REM for AIG-approved hot work equipment

35 FOOT RULE

- It's easy to overlook combustible materials like grass, debris, trash, or wood pallets
- Move combustible materials at least 35 feet away from the hot work area
- If they can't be moved, they must be protected with flame-proof covers, welding curtains, etc.

ALSO,...

- Relocate any combustibles on other side of wall
- If working at elevated location, provide covering under work area
- Close all doors and fire doors – check for gaps



FIRE WATCH

- What is a fire watch? Someone who continuously monitors the hot work area for fires that may be caused by flying sparks and any changes in the surrounding condition that may make hot work unsafe
 - This job is not to be given to someone who already has another job to do!
- They must be trained in how to properly use a fire extinguisher, including hands on practice
- Fire Watch need to be assigned to cover all areas where sparks might travel (floor or wall opening, open ductwork, grating, open sewer drains)
- Fire Watch will monitor the area for a minimum of 3 hours after hot work is complete (longer if necessary)

IMPORTANCE OF FIRE WATCH



- Why do we need fire watches?
 - Sparks produced by hot work operations can be spread over a large area. This makes it impossible for operators to do their work and watch for fires as well
 - Fire watches are ensuring that the operator is safe to continue performing the job, and keeping others safe around him/her

MANAGING OUTSIDE CONTRACTORS

- Contractors shall perform all hot work procedures in accordance with IPFW's Hot Work Program
- A Hot Work Permit is required for each job
- Keep in mind – contractors will have the expertise but may not be familiar with the hazards in the work area
- Contractors are not to use IPFW equipment

It is essential that our contractors adhere to regulations and our policies!

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- In accordance with your department's PPE Hazard Assessment, the following PPE is required for each task:
- **Grinding:** safety glasses w/side shield or goggles and face shield.
- **Soldering:** filter spectacles or hand shield (shield 1.5-3); safety shoes or shoe covers; work gloves.



Table 1
Filter Lenses for Protection Against Radiant Energy

Operations	Electrode size in 1/32" (0.8mm)	Arc current	Minimum* protective shade
Shielded metal arc welding	< 3	< 60	7
	3 - 5	60 - 160	8
	5 - 8	160 - 250	10
	> 8	250 - 550	11
Gas metal arc welding and flux cored arc welding		< 60	7
		60 - 160	10
		160 - 250	10
		250 - 500	10
Gas tungsten arc welding		< 50	8
		50 - 150	8
		150 - 500	10
Air carbon	(light)	< 500	10
Arc cutting	(heavy)	500 - 1,000	11
Plasma arc welding		< 20	6
		20 - 100	8
		100 - 400	10
		400 - 800	11
Plasma arc cutting	(light)**	< 300	8
	(medium)**	300 - 400	9
	(heavy)**	400 - 800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14
Gas welding: Light	< 1/8	< 3.2	4
Gas welding: Medium	1/8 - 1/2	3.2 - 12.7	5
Gas welding: Heavy	> 1/2	> 12.7	6
Oxygen cutting: Light	< 1	< 25	3
Oxygen cutting: Medium	1 - 6	25 - 150	4
Oxygen cutting: Heavy	> 6	> 150	5

Welding – Electric arc: Welding goggles & face shield (shade-see table); welding apron; safety shoes or shoe covers; welding gloves.

Welding – Gas: Welding goggles & face shield (shade-see table); welding apron; safety shoes or shoe covers; welding gloves.

IN CASE OF AN EMERGENCY

- Call Police at 911
- If applicable, pull Fire Alarm.



QUESTIONS?

- Contact your supervisor
- Refer to the written IPFW Hot Work Program
- As always, call REM at either 15744 or 14193.



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