FREEPORT-McMoRan

Hot Work Policy

Health and Safety FCX-HS06 | Release 3/2018 | Version 2

POTENTIAL FATAL RISKS

Fire
Exposure to Hazardous Substances - Chronic

CRITICAL CONTROLS

- Segregation/Storage:
- Atmospheric Testing
- Suppression Systems/Fire Extinguishers
- Rescue Systems
- Fire Watch
- Hot Work Permit Execution
- Alarm System
- Hazard Awareness
- Handling Requirements
- Engineered Controls
- PPE

Additional procedures required to perform Hot Work in or on the following:

- Fuel & storage tanks
- Pressure vessels and piping systems
- Rubber lined equipment & belts
- Within 100ft/30m of powder magazines
- Dust collectors
- SX/EW Operations
- Heavy & Mobile Equipment
- Vessels or Confined Spaces
- Within 35ft/11m of combustible or flammable materials
- Within 50ft/15m of pressurized gas cylinders

Available References for Researching Pressure Vessel Management:

- ASME Boiler and Pressure Vessel Code
- API 510
- OSHA Pressure Vessel Guidelines
- NBIC certified inspectors for compliance inspections

TRAINING REQUIREMENTS

Hot Work Training: Initial, Annual Refresher and Remedial as necessary

POLICY

OVERVIEW

Hot work is any process that can be a source of ignition when flammable or combustible materials are present, or can be a fire hazard regardless of the presence of flammable/combustible materials in the workplace. Common hot work processes are welding, soldering, cutting, grinding and brazing.

A **hot work permit** is required for hot work operations unless working in designated 'fire safe' area (e.g. welding shop). Fire safe areas shall be documented by management. Hot work permits are valid for one work shift and one task. Operational areas shall have signage indicating fire hazards that may not be easily recognizable to personnel (i.e. machinery containing rubber liners, conveyor galleries, oil containment/storage, etc.).

ACTIONS TO STAY SAFE

- Evaluate other mechanical means/cold work for task completion before hot work is considered as an option.
- Hot work permit must be completed by all involved prior to the work initiating unless the area is designated as 'fire safe,' and remain in the area until work is complete and permit is cancelled.
- Use appropriate controls around conveyance systems to prevent ignition sources from contacting belts or conveyed material.
- Remove combustible materials if possible. Where not feasible, cover and protect areas where potential for fire exists. This includes openings in floors/grating and walls, and flammable garments and PPE.
- Atmospheric monitoring shall be conducted as part of the permit process where there is a reasonable possibility for flammable gases/vapors/excessive oxygen to exist
- Evaluate conditions throughout the shift for potential changes to the work environment.
- Hot work will **not** be performed on vessels or systems under pressure.
- Purge vessels prior to welding/cutting on them.
- LEL must be below 10%.
- Oxygen Measurement must be below 23%.
- Fire extinguishing equipment must be immediately available.
- Fire Watch shall be in place during work and 60 minutes after the work is completed and deploy controls to prevent a fire from occurring.
- Sites will establish procedures for notification and management approval when alarm systems, or fire suppression/sprinkler systems are deactivated for any reason.
- Manage potential risk for fire hazards at all levels around work area (grinding debris, welding slag, sparks etc.).
- Prior to cancelling permit, a thorough inspection of the work area must be completed.

HOT WORK PERMIT FCX-HS06 Version 2

Before signing this permit, think through the entire task and identify, evaluate and control energy sources. Safety precautions described in the Hot Work Policy must be followed. Every line on both sides must be completed. Evaluate the use of cold work alternatives prior to starting hot work.

Not valid if work is delayed for 90 minutes or more. Good for one shift only

Date_____ Shift_____
WO No._____
From_____ AM/PM To_____ AM/PM
Bldg. or Area_____
Dept._____ Floor_____
Task/Activity _____
_____
_____
Hot Work Performed By _____
_____
Fire watch assigned? ☐ Yes ☐ No
Required, if uncovered combustibles remain within 35 feet.

Fire Watch _____
_____
Time Released by Fire Watch_____ AM/PM

I verify that the area has been inspected

_____
Signatures of Persons Performing Work

_____
Signature of Area Supervisor or Designee

Emergency Contact_____

COMPLETE THIS SECTION AT END OF JOB
Work Completed Date & Time:_____
I verify the area has been monitored for the absence of fire for **60 minutes** after hot work ceased, and that a thorough inspection of the entire work area has been completed.
Final Inspection by:_____
Time:_____

HOT WORK ON CONTAINERS & FUEL TANKS
Containers holding flammable or combustible liquids or gases have been purged, cleaned, and filled with inert liquid or gases and tested for %LEL/LFL. NOTE: Welding on mobile equipment fuel tanks is not permitted.
_____ Initial when reading is taken and tested to verify an LEL/LFL less than 10%

HOT WORK IN ALL AREAS, INCLUDING THE ABOVE
1. Person completing "Hot Work Permit" understands hazards in the hot work zone.
☐ Yes ☐ No
2. Flame or spark-producing equipment to be used has been inspected and found to be in good repair.
☐ Yes ☐ No
3. Sprinklers and fire water, where provided, are in working condition and will remain in service while this work is being done.
☐ Yes ☐ No
4. Portable fire extinguishers are available, are appropriate for the fire hazard, and personnel have been trained to use them.
☐ Yes ☐ No
5. All combustibles have been relocated 35 feet from the hot work, and the remainder protected with flame-proof curtains or covers, and a fire watch is assigned as needed.
☐ Yes ☐ No
6. All voids and openings leading to other areas (rooms, floors) have been covered.
☐ Yes ☐ No
7. All appropriate SOPs and good work practices are being followed.
☐ Yes ☐ No
8. Do you have the proper personal protective equipment including welding shields, respirators, hearing protection for the job?
☐ Yes ☐ No
9. A method for contacting emergency responders is in place.
☐ Yes ☐ No

IF ANY ANSWER IS NO, A VARIANCE MUST BE COMPLETED

AIR TESTING REQUIRED FOR WORK NEAR FLAMMABLE LIQUIDS AND GASES

Oxygen level _____ % LEL _____ % Time
Oxygen level _____ % LEL _____ % Time
Oxygen level _____ % LEL _____ % Time

Work must not proceed if oxygen level is above 23%, or the LEL is greater than 10% (note that oxygen must be above 19.5% in order to accurately measure LEL/LFL).