

Manual Section 7	Issue Date 07/15/04	Revision Date 01/15/26	Policy Number LLCP-079
Hot Work			

Purpose

This policy was developed to ensure that Hot Work will be managed and proper actions are taken to prevent loss due to fire caused by Hot Work. To establish minimum health and safety requirements for performing hot work during maintenance, construction, fabrication or other activities meeting the definition of Hot Work.

Scope

All GIS Holdings, LLC Companies and affiliates including, Blanchard Industrial, LLC, GIS Engineering, LLC, Grand Isle Shipyard, LLC., GWIS, Mack Steel, NuWave, Valvemax, Discovery Industries, Inc., Global Inspections, LLC, and EIS, hereafter identified as “Company”.

General

Following hot work procedures and permit requirements will help ensure that, the workplace is safe from fire and/or explosion so that the work can be done without incident. This Policy covers areas where there is likelihood that flammable gas or vapors are, or may be present, such as:

- Vessels or Barges
- Pipeline Stations
- Terminals
- Tank Farms
- Pipeline Corridors
- Leak Sites
- Excavations greater than four feet deep where there is a possibility that a hazardous atmosphere or an engulfment hazard could exist.
- Pig Launchers

This Policy must be followed when any work to be conducted with the above listed areas involves equipment or work practices that are likely to produce an ignition source when there is a potential for a flammable or explosive atmosphere from the presence of flammable or combustible materials. Hot work includes but is not limited to activities such as:

- Burning and Cutting
- Welding of any type
- Brazing
- Grinding
- Hot tapping
- Dry abrasive blasting
- Impact tools
- Electrical work on energized circuits and electric operated tools
- Pipe cleaning by machine
- Explosives
- Chipping

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Personnel required to perform any type of arc welding or cutting shall be trained and assessed in accordance with Company Competency Assurance program to ensure each employee is qualified to perform each task. At a minimum, affected company employees assigned to maintain or operate welding or cutting equipment must be familiar with 29 CFR 1910.254 and 29 CFR 1910.252(a-c).

All personnel involved in hot work shall be trained in the use of equipment utilized in hot work operations and safe work practices. Before performing hot work, alternatives should be considered to minimize risk to personnel and facilities. Consideration shall be given to:

- Fire retardant clothing
- Proper and adequate ventilation
- First aid equipment shall be made available at all times
- Firewatch availability and equipment
- Employees in charge of oxygen or fuel gas supplies shall be trained and competent to operate it.
- Shielding or removing combustible materials within the hot work location.
- Proper inspection of all equipment being used.
 - Employees shall report any equipment defect or safety hazards found to their supervisor. Use of equipment found to be defective shall be discontinued until the safety of the equipment has been assured. Repairs shall only be made by qualified personnel.
- Hotwork done in a confined space.
 - If so, the work must be done under both the confined space and hot work permit requirements. Both permits may be issued together or separately.
 - Ventilation shall be used at all times for hot work in confined spaces.
 - When welding or cutting is being performed in any confined spaces, the gas cylinders and welding machines must be left on the outside.
 - Before operations are started, portable equipment mounted on wheels must be securely blocked to prevent accidental movement.
 - Any time an employee must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing them in case of emergency.
 - When safety belts and lifelines are used for this purpose, they shall be attached to the employee's body in a way that their body cannot be jammed in a small exit opening.
 - An attendant with a preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.
 - If/When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine shall be disconnected from the power source.
 - In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight.
 - Where practicable the torch and hose must also be removed from the confined space.
 - After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

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- The hot work location.
 - If the hot work does not have the potential for spark travel (PWE), a hot work location includes any area within ten feet of a flammable/combustible liquid or material or flammable lighter-than-air gas source.
 - If the hot work has the potential for spark travel, the hot work location then extends to an area within 35 feet of a flammable/combustible liquid or material, or flammable lighter-than-air gas source. If the hot work has the potential for spark travel, and highly volatile liquid products are involved; then the hot work location extends to a 150 foot radius from the potential highly volatile source.
 - Open containment (open production/hydrocarbon vessels)

Potential Hydrocarbon sources include but are not limited to:

- Process equipment (pumps, meters, etc.)
- Separators
- Manifold/header systems
- Tanks
- Sewers / Sumps

Before performing hot work, a formal inspection of the area shall be conducted and a permit must be issued by a person responsible for granting authorization. The permit must list the hot work location and a brief description of the work to be performed, the permit duration and the date. This permit is valid:

- Until the end of the shift,
- Until conditions change that alter the permit, or
- The end of job, whichever comes first

The permit must be posted at all times, protected from inclement weather and remain at the job site. The customer may issue the permit or delegate the responsibility to the contractor. If the work has not started within 30 minutes of issuance, the atmosphere must be retested and recorded on the permit.

Prior to the permit being issued, the person in charge of the job must certify the area safe. A work-site safety inspection of the work area must be completed and the atmosphere monitored with the results written on the permit. Oxygen level must be 19.5% to 22%, combustible gas level may not exceed 0% LEL and toxicity at or below the permissible exposure limits if no respiratory protection is used.

When a possibility of flammable gas or vapor build-up exists in the hot work area, continuous monitoring must be conducted. All readings taken must be recorded. The atmospheric monitor utilized to collect these readings must be in current calibration.

If required, forced air ventilation (general or local exhaust) must be established to ensure movement of fresh air in the hot work area to provide a safe atmosphere, and then retested to ensure safe entry is possible. Mechanical ventilation equipment normally consists of a blower (air mover) powered by an electric, air or water driven motor. The air mover must be grounded or electrically bonded to prevent static sparks. Combustible materials within 35 feet of hot work sources producing spark travel must be shielded from heat and/or sparks or removed from the work area.

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Hot work requires a fire watch and extinguishers when,

- Combustible material, in building construction or contents, closer than 35 feet to the point of operation
- Combustibles are more than 35 feet away but are easily ignited by sparks
- Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas including concealed spaces in walls or floors
- Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

The fire watch must:

- Know the hazards that may be encountered for the work being performed;
- Have the appropriate extinguisher readily available
- Have no other duties while actual welding or burning is in progress;
- Remain in the work area for 30 minutes after welding or burning is complete to ensure that there is no fire hazard remaining after completion of the work.

Responsibilities of a fire watch include:

- Be trained on the use of applicable fire protection equipment;
- Be able to recognize changing conditions within the work area and outside the work area that may affect the hot work activity;
- Know and be able to activate the alarm and initiate the emergency evacuation and action procedures;
- Be able to use gas monitoring equipment;
- Understand and be able to demonstrate activation of emergency notifications;
- Be trained and knowledgeable with the permit program;
- Be equipped with the appropriate personal protective equipment;
- Be equipped with gas monitoring/detection equipment
- Assure that Fire Blankets are red in color, labeled as fire retardant, be coated or impregnated with silicone and has proper grommets.
- Be instructed and judged competent to be in charge of oxygen or fuel gas supply equipment

At least one fire extinguisher must be positioned at the fire watch location and ready for immediate use prior to beginning hot work. Fire extinguishers must not be removed from a facility for fire watch use. Two additional fire extinguishers to be used as back up should be positioned near the fire watch location.

Prohibited Areas

Hot work shall not be permitted in the following situations:

- Areas not authorized by Management or Supervision (Company)
- Sprinkler protected buildings while such protection is impaired.
- In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts in air) or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or may develop in areas with an accumulation of combustible dusts.
- In areas near the storage of large quantities of exposed, readily ignitable materials.

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Hot work shall only be permitted in areas that have been made “fire safe”. When work cannot be moved practically, the area shall be made safe by removing or protecting combustibles; or by mechanical means such as guards or a welding habitat to confine heat, sparks and slag. If this cannot be done safely or there are any deviations from this, the job shall be stopped and would require a Company MOC.

Compressed Gas Cylinder Considerations

Handling, storage, and use of compressed gases around the job site represent a number of hazards. Approved practices include:

- Keep valve protection cap in place at all times when a cylinder is not in use.
- When cylinders are hoisted, secure them on a cradle, sling board, or pallet.
- Move cylinders by tilting and rolling on their bottom edges. Care in handling is required.
- Secure cylinders in an upright position at all times, especially when moving them by machine.
- Use carriers or carts provided for the purpose when cylinders are in use.
- When in use, isolate cylinders from welding or cutting or suitably shielding. Care will be taken to prevent them from becoming part of an electrical circuit.
- Maintain a distance of at least 20 feet or provide a non-combustible barrier at least five feet high in separating fuel gas cylinders from oxygen cylinders. This applies to indoor and outdoor storage.

Open Production Vessels

To mitigate the risks of opening vessels on a hydrocarbon facility, NO HOT WORK shall be allowed until the following has occurred:

- Continuously vent and monitor the inside of the vessel for hydrocarbons until within acceptable parameters, **(0% LEL)**
- Shut ventilation down for 30 minutes
- Retest the entire space inside the vessel for gas
- Readings MUST be at 0% LEL to consider hot work beginning

NOTE: A MOC must be requested prior to performing hot work while there is a break in containment of any kind.

Hot Tapping

In-service welding or hot tapping requires special precautions. Additional precautions may include:

- A complete design review, drawings and wall thickness of the line to be welded.
- No welding on pressurized lines with zero flow rate.
- Normally, no welding on wall thickness less than .25”
- No welding on compressed airlines from a lubricated compressor.
- No welding on lines containing greater than 21% oxygen.

All parties must maintain copies of the permit for a six-month period or longer should an accident occur.