## Welding, Cutting, Hot Work

1. **Purpose**

The purpose of this policy is to ensure that employees are properly trained, aware of hazards associated with hot work, and correctly informed of our policies, practices, and procedures to prevent, or if possible, eliminate these hazards.

1. **Procedure**

* All welders, cutters, and their supervisors involved in the performance of hot work operations shall be properly trained in the safe operations of any equipment required, the safe use of the process, proper PPE, and safety procedures to be followed.
* Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.
* Where possible, all hot work operations will be performed outside of buildings or structures, clear of any foreseeable fire hazards. If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.
* If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat sparks and slag and to protect the immovable fire hazards.
* If the requirements for fire hazards and guarding as stated above and in paragraphs 1910.252(a)(1)(i) & (a)(1)(ii) cannot be fully met, welding and cutting operations will not be performed until hazardous conditions are fully resolved.
* Any welding, cutting or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection.
* First aid equipment shall be made available at all times for employee use during welding and cutting operations. First aid kits are kept in all vehicles and are regularly inspectedto ensure that contents are kept fully stocked and that the appropriate items are available.
* Workers in charge of oxygen or fuel-gas supply equipment (including distribution piping systems and generators) will be instructed and judged competent for such work.
* Fuel gas and oxygen cylinders must be transported, moved, stored, and used in an upright position, secured to prevent tipping, and located to prevent accidental collision with the cylinders. Cylinders must be kept away from any heat or combustion sources, and at least 20 feet from any flammable gases or petroleum products. When not in use, cylinders must have their valves closed, any regulators or attachments removed, and their valve covers in place.
* Personnel assigned to operate or maintain arc welding equipment will be properly trained & qualified to operate such equipment and in safety procedures and familiar with OSHA §1910.252(a)(b) & (c) and §1910.254 requirements for arc welding and equipment handling.
* Operators of equipment shall report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs shall be made only by qualified personnel.
* Before cutting or welding is permitted the area shall be inspected by the project manager. Precautions to be taken shall be in the form of a written permit.

1. **Fire Watch**

A fire watch shall be assigned when any of the following conditions exist:

* Locations where other than a minor fire might develop.
* Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation.
* Appreciable combustibles are more than 35 feet away, but are easily ignited by sparks.
* Wall or floor openings within a 35-foot radius that 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.
* Fire watchers shall have fire extinguishers readily available.
* A fire watch shall be maintained at least a half an hour after the welding or cutting operation was completed.

1. **Confined Spaces**

Any hot work to be performed in confined spaces will conform to Permit-required Confined Space procedures and the following requirements:

* Adequate ventilation is a prerequisite to work in confined spaces.
* When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines will kept outside of the space. Before operations are started, gas cylinders will be secured, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement, and warning signs will be posted.
* Where a welder must enter a confined space through a manhole or other small opening, means will be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they will be so attached to the welder‘s body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.
* When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes will be removed from the holders and the holders stored so that accidental contact cannot occur and the machine 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 will 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 will also be removed from the confined space.