



Work Instruction	
HOT WORK (WELDING AND CUTTING)	

Work description: Hot Work		
Scope: Work activities involving cutting, welding, brazing, soldering or grinding		
References: <ul style="list-style-type: none"> U.S. Occupational Safety and Health Administration (OSHA) Occupational Safety and Health Standards for General Industry contained in Title 29 of the Code of Federal Regulations Part 1910 (29 CFR 1910) (§1910 Subpart Q) State of Hawaii - Development Occupational Safety and Health Section (HIOSH) - Hawaii Administrative Rules Title 12, Department of Labor and Industrial Relations Subtitle 8, Hawaii Occupational Safety and Health Division Part 2, General Industry Standards Chapter 60 (§12-60-2(b) Safety and health programs.) 		
PPE and precautions	Competencies or qualifications	Licenses or permits required
See Below	As per Task Risk Assessment	As per Task Risk Assessment
Tools and equipment required		
As per Task / Work Instruction		

 Note <i>Activities performed by HRH may include welding machines and the use of cutting torches. Personnel performing welding or cutting may be exposed to metal fumes and burns from hot metal or the equipment itself. In addition, welding and cutting activities increase the potential for fires and can also present an explosion hazard. When using cutting torches, the additional hazards of handling and using compressed gas cylinders are introduced.</i>	
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Injury Prevention All	To prevent injuries and fires, the following rules shall apply for welding and cutting operations: <ul style="list-style-type: none"> Welders, cutters, and their supervisor(s) shall be trained in the safe operation of the equipment, safe/welding and cutting practices, and welding/cutting respiratory and fire protection requirements. Welding and cutting equipment shall be inspected daily. Defective equipment shall be removed from service immediately and replaced or repaired. The equipment shall be reinspected prior to being placed back in service. Welding and cutting equipment and operations shall be in accordance with recommended practices of the most current ANSI/AWS Z49.1 standard. Employees performing welding, cutting, or heating shall be protected by personal protective equipment appropriate for the hazards. At a minimum, personal protective equipment requirements for respiratory, skin, and eye protection shall be evaluated. All welding, cutting, and heating operations shall be naturally or mechanically ventilated such that personnel exposures to hazardous concentrations of airborne contaminants are within acceptable limits. Other persons exposed to the same atmosphere as welders or cutters shall be protected in the same manner as the welders or cutters. Workers, watchers, and the public shall be shielded from welding rays, flashes, sparks, molten metal, and slag. Cables, hoses, and other equipment shall be kept clear of passageways, ladders, and stairways.
	Fire Prevention All <ul style="list-style-type: none"> No welding or cutting is allowed when combustible vapor concentrations exceed 10 percent of the lower explosive limit (LEL). Objects to be welded, cut, or heated shall be moved to a location free of dangerous combustibles, or all combustibles in the area must be removed (to a minimum distance of 35 feet horizontally) or protected from sparks, flames and/or slag. Openings or cracks in walls, floors, or ducts within 35 feet of the site shall be tightly covered to prevent the passage of sparks to adjacent areas. When welding, cutting, or applying heat to walls, floors, or ceilings, the same precautions shall be taken on the opposite side as are taken on the side on which the hot work is being performed. A designated fire watch with a charged fire extinguisher rated 2A (minimum) must be in the immediate vicinity during hot work. The fire watch must remain after hot work completion for at least 30 minutes to check for flare-ups Additional fire watches shall be posted when welding, cutting, or heating activities are performed in such a manner that normal fire prevention precautions are not sufficient. Fire watches shall be trained in anticipated fire hazards and how to use the available fire extinguishing equipment.

Approved By:	<input type="checkbox"/> Director, Operations and Maintenance	<input type="checkbox"/> Department Manager	<input type="checkbox"/> Manager, HSE (Operations and Maintenance)
Signature:			
Date:			

Document Code	YYY.YYY. Hot Work (Welding and Cutting).0	Effective Date:	
File Name	HNL-09689-00.01-Hot Work (Welding and Cutting)	Rev No. 0	Page 1 of 2

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Welding and Cutting of Hazardous Materials <i>All</i>	<ul style="list-style-type: none"> • If the flammability of a preservative coating is not known, a competent person shall conduct a test to determine its flammability before any welding, cutting, or heating is commenced. • Preservative coatings shall be removed a sufficient distance from the area to be heated to ensure any temperature increase of the unstripped metal will not be appreciable and to prevent ignition of the preservative coating. • When welding, cutting, or heating on surfaces covered with toxic preservatives, all covered surfaces shall be stripped of such coverings for a distance of at least 4 inches in all directions from the point of heat application or employees shall be protected with general mechanical or local exhaust ventilation and/or the appropriate respiratory protection.
Requirements for Cutting Torches <i>All</i>	<ul style="list-style-type: none"> • Torches will be lighted using a sparking device, not by an open flame or from hot work. • Hoses shall be purged individually before lighting a torch for the first time each day and shall not be purged into confined spaces or near an ignition source. • Clogged torch tip openings shall be cleaned with suitable cleaning wires or other devices designed for such purposes. • Fuel gas and oxygen hoses must be distinguished from each other. • When parallel sections of oxygen and fuel gas hoses are taped together, not more than 4 inches out of 12 inches shall be covered by tape. • Boxes used for the storage of hoses shall be ventilated. • Couplings must not disconnect by means of a straight-pull motion. • Oil or grease must never come in contact with oxygen equipment. • Never use leaking equipment. • Never use oxygen from a system without a pressure regulation device. • Gas cylinders must be protected against heat. • Gas cylinders must not be placed where the cylinders might form a part of any electrical circuit. • Backflow preventers must be used on oxygen and fuel gas supply lines. • Gas cylinders in service must be secured upright and placed so that the cylinders will not fall or be knocked over. • Gas cylinders in storage and transport must have valve caps in place and be secured in an upright position. • Torch valves shall be closed and the gas supply shut off whenever work is suspended. • At the end of each shift, cutting torch hoses, regulators, and gauges shall be removed from the gas cylinders and the valve caps shall be replaced. • If it is reasonably anticipated that gases will not be drawn through in service cylinders for a period of 24 hours or more, the gas cylinders shall be placed in storage. • Oxygen cylinders in storage must be separated from fuel gas cylinders a distance of 20 feet or by a noncombustible barrier at least 5 feet high. • When being hoisted, gas cylinders must be handled in suitable cradles with valve caps in place; cylinders should never be lifted with a magnet, rope, or chain. • Valve stem wrenches must be left in place while cylinders are in use. • Acetylene regulators shall not be adjusted to permit a discharge greater than 15 pounds per square inch (psi) gauge.