

FORM S+H 5-1 JOB HAZARD ANALYSIS

JOB HAZARD ANALYSIS		Date: 12/13/1999
Contract:(If Applicable)		Phase: All Phases- Fire Protection
LLNL -Contractor/ Subcontractor: Nielsen Dillingham Builders Inc.		Location: LLNL-NIF
NIF Element: CSP- 6/10		
ACTIVITY OPERATIONS	UNSAFE CONDITION, ACTION or OTHER HAZARD	PREVENTATIVE or CORRECTIVE ACTION THAT WILL BE TAKEN
Hot work: Cutting, Welding, Heating Roofing. Vehicles. Fuel Storage, Explosive Use/ Storage. Painting etc.	Fires, explosions, burns, exposure to flammable vapors, toxic gases, confined or restricted spaces.	Prior to any welding operation, the following controls must be established: <ul style="list-style-type: none"> • No welding is permitted in an explosive environment. • Remove or guard all combustible materials in the work area. • Provide suitable fire extinguishers, water containers, water hoses, sand, in the work area.
Fire prevention	"	Employees will be instructed in hot work safety.
All Welding	Burns to skin, eyes	Welders will be required to wear: <ul style="list-style-type: none"> • Non-flammable glove with gauntlets. • Appropriate footwear. • Aprons (leather) and shirts with sleeves and collars. • Helmets, suitable for head protection (hoods and face shields). • Suitable eye protection. • Respiratory protection (as required).
Arc Welding	Burn to eyes of others	Flash screens must be provided to protect eyes of non-welders from flash burns and ultraviolet light rays.
Gas Welding	Fire, explosion, release of gases	Fuel gas and oxygen hoses must be distinguished from each other.
"	"	Couplings must not disconnect by means of a straight-pull motion.
"	Explosion	Oil or grease must never come in contact with oxygen equipment.
"	"	Never use oxygen from a system without a pressure regulation device.
"	"	Gas cylinders must be protected against heat.

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Gas Welding	Explosion	Gas cylinders must not be placed where they might form part of an electrical circuit.
"	Explosion, uncontrolled release of gases.	Gas cylinders in service must be secured upright and placed so they will not fall or be knocked over.
"	"	Gas cylinders must be handled in suitable cradles with valve caps installed; they must never be lifted by magnet, rope or chain.
"	Fire, explosion	Oxygen cylinders in storage must be separated from fuel gas cylinders a distance of 20' or by a non-combustible barrier 5' high with a 1/2 hour fire rating.
"	"	Valve stem wrenches must be left in place while cylinders are in use.
Arc Welding	Electrocution	Cables in poor condition must not be used ; no cable can be spliced within 10' of the electrode holder.
"	"	The frames of arc welding machines must be grounded.
"	"	When electrodes and holders are not in use, they shall be protected so that they cannot make contact with employees or conducting objects.
"	"	Any defective welding equipment must not be used.
All welding	Asphyxiation, lung damage	Eliminate the possibility of overexposure To airborne contaminates.
Welding outdoors	"	Respirators are required for any operations involving beryllium, cadmium, lead, or mercury.
"	"	For other operations and materials, Respirators are not required where natural and/ or mechanical ventilation is sufficient to prevent exposure to airborne contaminants exceeding the specifications of CCR Title 8 Sect. 5155.
Welding Indoors	"	Respirators will be used when local exhaust or mechanical ventilation is not feasible to prevent exposures.
Welding in enclosed spaces.	"	Air supplied respirators will be used where local exhaust ventilation is not an effective means for preventing potentially hazardous exposures.

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All hot work	Fires	Fire watch will be used if there is an extreme fire hazard or if there is potential for a fire occurring after the hot work is complete.
“	“	A fire escape plan will be developed if the potential for entrapment is possible.
“	“	Fire extinguishers will be regularly inspected for condition, location and readiness.
“	“	Portable fire extinguishers are to be placed within 75’ of work areas.
Smoking	“	Smoking will only be permitted in areas that are deemed safe for such activity. No smoking areas will be posted.
Storage of flammable or hazardous materials	Fire prevention	Materials will be stored as per the MSDS and the manufacturer’s suggestions so as to minimize the potential for fire.
Housekeeping	“	House keeping will be performed to minimize the accumulation of combustibles, trash, waste & materials.
Report of Fire	Fire	In the event of fire, the LLNL Fire Dept. will be notified first, any attempt to extinguish the fire will then be attempted. All personnel will exit the area and stay clear until the all clear signal is given.

CM Review

LLNL Group/Contractor/Subcontractor Review

PCI Contracting
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