

Project Review**Date:****Principle Investigator:****Permit #: G-****Location:****Department:****Contact Information:****Scope of work (agents, conditions, activities):****Hazards associated with the task/equipment:****Agent:**

- ☐ Fluids/compressed gasses:
- ☐ Chemical asphyxiant:
- ☐ Simple asphyxiate/oxygen deficient
- ☐ Toxic
- ☐ Carcinogenic
- ☐ Teratogenic
- ☐ Mutagenic
- ☐ Reproductive hazard
- ☐ Nonionizing radiation
- ☐ Laser (class 3b or 4): class _____
- ☐ Biological hazard/pathogenic
- ☐ Sensitizing
- ☐ Corrosive
- ☐ Self-reactive or unstable
- ☐ Reducing
- ☐ Peroxide-forming
- ☐ Catalytic
- ☐ Pyrophoric
- ☐ Potentially explosive
- ☐ Flammable/combustible
- ☐ Oxidizing
- ☐ Water-reactive

Condition:

- ☐ High Pressure:
- ☐ Low Pressure/vacuum: _____
- ☐ Electrical (50v): voltage
- ☐ Steam: _____psi
- ☐ Pneumatic (15 psi):
- ☐ Hydraulic:
- ☐ Suspended weight: _____lbs.
- ☐ Uneven surfaces
- ☐ Mechanical/moving parts
- ☐ Hot surfaces (2nd degree burn)
- ☐ Extreme cold
- ☐ Fall hazard/heights
- ☐ Cave in/collapse
- ☐ Clutter/confined area
- ☐ Noise (85 dbA): _____dbA
- ☐ Exhaust
- ☐ UV radiation
- ☐ Magnetic fields
- ☐ Vibration
- ☐ Robotics
- ☐ Open flame/sparks/potential fire hazard
- ☐ Fabricated parts (non-UL, non-ASME, etc.)

Activity

- ☐ Lifting (mechanical or person)
- ☐ Chemical mixing
- ☐ Waste handling –
- ☐ Transportation of hazardous materials

- ☐ Sharp objects
- ☐ Fuel storage
- ☐ Remote location
- ☐ Construction site access
- ☐ Creation of secondary product: _____

Risk Rating (with weighted scaling per NFPA 45) before controls:

CV =

OV =

Risk Rating (CV x OV) =

- ☐ No Risk (RR=0)
- ☐ Low Risk (RR=1-9)
- ☐ Medium Risk (RR=10-19)
- ☐ High Risk (RR=20-59)
- ☐ Critical Risk (RR=60-100)

Engineering Controls: ☐ Fume Hood ☐ Bio Safety Cabinet ☐ Local Exhaust Ventilation ☐ Dust Collection System ☐ Enclosure/Guards/Barriers ☐ Shielding ☐ Shoring ☐ Distance ☐ De-energization/Lockout-Tagout ☐ Isolation/Control Room ☐ Elimination/Substitution ☐ Mechanical Devices/Equipment ☐ Soundproof Room/Chamber ☐ Designed for MAWP & Temp ☐ UL or ASME rated ☐ Variance granted (VDOLI) ☐ Insulation/Encapsulation ☐ Other:	Administrative Controls: ☐ EHS Safety Training ☐ Task/Hazard Training ☐ SOP developed ☐ SWPs followed ☐ Noise reduction ☐ Restricted access ☐ Entry assessment ☐ Air Monitoring ☐ Exposure Monitoring ☐ Haz Com Plan/CHP ☐ Medical Surveillance ☐ Energy Control Proc. ☐ PFE/Fire Watch ☐ Hazard Analysis ☐ Schematic (detailed) ☐ Hot Work Permit ☐ Vaccination(s) ☐ Warning signs	Personal Protective Equipment: ☐ Hazard Assessment Form ☐ Included in SOP
Risk Rating (with weighted scaling per NFPA 45) <u>after</u> controls: CV = OV = Risk Rating (CV x OV) =		☐ No Risk (RR=0) ☐ Low Risk (RR=1-9) ☐ Medium Risk (RR=10-19) ☐ High Risk (RR=20-59) ☐ Critical Risk (RR=60-100)
What If Analysis: Worst-case scenario? Lose power unexpectedly? Power returns unexpectedly? Vessel/hose/connection fails? Lose pressure? Excessive pressure?		
Action Items/Comments:		

NFPA 45, Table B-1: Severity of Consequences with <i>Weighted</i> Scaling						
Consequence Value (CV)		Impact to:				
Rating	Value	Personnel Safety	Resources	Work Performance	Property Damage	Reputation
No Risk	1	No injuries	No impact	No delays	Minor	No impact
Minor	5	Minor injuries	Moderate impact	Modest delays	Moderate	Potential damage
Moderate	10	Moderate to life impacting injuries	Additional resources required	Significant delays	Substantial	Damaged
High	20	Life threatening injuries from single exposure	Institutional resources required	Major operational disruptions	Severe	Loss of confidence

NFPA 45, Table B-2: Probability of Occurrence with Standard Linear Scaling		
Occurrence Value (OV)		Probability of Occurrence
Rating	Value	Percent
Not present	0	0%
Rare	1	1-10%
Possible	2	10-50%
Likely	3	50-90%
Almost certain to certain	4	90-100%

NFPA 45, Table B-6: Hazard Risk Rating with Weighted Scaling					
		Severity of Consequences (CV)			
	Ratings	CV = 1 No Risk	CV = 5 Minor	CV = 10 Moderate	CV = 20 High
Probability of Occurrence (OV)	OV = 4	RR = 4 LOW	RR = 20 HIGH	RR = 40 HIGH	RR = 80 CRITICAL
	OV = 3	RR = 3 LOW	RR = 15 MEDIUM	RR = 30 HIGH	RR = 60 CRITICAL
	OV = 2	RR = 2 LOW	RR = 10 MEDIUM	RR = 20 HIGH	RR = 40 HIGH
	OV = 1	RR = 1 LOW	RR = 5 LOW	RR = 10 MEDIUM	RR = 20 HIGH
	OV = 0	RR = 0 N/A – The material or process is not present in the laboratory.			

NFPA 45, Table B-4: Risk Level and Response Expectations	
Risk Level	Expectation of Response
LOW	Acceptable level of risk. Monitor and manage.
MEDIUM	Tolerable level of risk. Implement corrective action and consider additional controls.
HIGH	Tolerable level of risk with strict controls and oversight. Implement mitigating and corrective actions with routine monitoring and oversight.

CRITICAL

Intolerable level of risk.
Implement mitigating and corrective actions. Engage higher levels of management.