

P5 MELT CONFINED SPACE LOG

MACHINE NUMBER SPACE DESCRIPTION	SPACE DESIGNATION	HAZARDS		REQUIRED ENTRY EQUIPMENT	FREQUENCY OF ENTRY
		ACCEPTABLE ENTRY PROCEDURES			
Non-Metallics Weigh Hopp	Non-permit Ventilation	Dusty atmosphere, possible lack of oxygen (rusty metal) Mechanical belts feed into space Engulfment by contents Entrapment in bottom taper Fall hazard greater than 4 feet	1. Empty contents of bin and close bottom sliding door. 2. Perform lockout of infeed belts and vibration device 3. Air monitoring must be within acceptable limits	Multi Gas Air Monitor Body Harness Lifeline/rope Mechanical Retrieval Device Portable Ladder	As needed for Maintenance Only
Metallics Weigh Hopper	Non-permit Ventilation	Dusty atmosphere, possible lack of oxygen (rusty metal) Mechanical belts feed into space Engulfment by contents Entrapment in bottom taper Fall hazard greater than 4 feet	1. Empty contents of bin and close bottom sliding door. 2. Perform lockout of infeed belts and vibration device 3. Air monitoring must be within acceptable limits	Multi Gas Air Monitor Body Harness Lifeline/rope Mechanical Retrieval Device Portable Ladder	As needed for Maintenance Only
Railcar Sand, Scrap, Alloys and Non Metal	Permit Required	Dusty atmosphere Engulfment by contents (sand) Possible toxic atmosphere (low level CO) Fall hazard greater than 4 feet	1. Empty contence of space. 2. Continuous ventilation required, a portable blower may be necessary 3. Air monitoring must be acceptable prior to entry 4. Blue flag on tracks to prevent railroad from moving car.	Multi Gas Air Monitor Body harness Lifeline/rope 2-way radio Mechanical retrieval device Blue Flag	As needed for maintenance only
Commodity Pit #50100-150 (Pit Shaker) #50100-400 (Pit Conveyer)	Non-permit	Material falling from above if hopper sides are removed. Moving parts shakers & rollers	1. Conveyor belts need permanent guarding, if guards are removed the system must be locked out prior to entry. 2. Hot work requires ventilation and air monitoring 3. Blue flag on railroad track to prevent dumping into area. 4. Barricade area to prevent trucks from dumping. 5. Oxy/fuel tanks shall be left outside the space	Ladder Multi Gas Air Monitor Blue flag and Barricades	As needed
Charge Bucket #50100-201 (P1-East) #50100-202 (P1-West) #50100-401 (P2-East) #50100-402 (P1-West)	Non-permit	Fall hazard greater than 4 feet	1. Empty contents of bucket 2. Lockout crane magnet and bucket to prevent movement 3. Secure bottom doors 4. Lockout weigh hoppers.	Portable Ladder	As needed
Charge Tunnel #5010-200 (Gray) #50100-400 (Ductile)	Non-permit Ventilation	Charge bucket moving in and out of space Possible low level CO (from welding equipment).	1. Lockout Non-metallics, metallics shaker and pit car to prevent movement 2. Barricade area directly under weigh hoppers.	Multi Gas Air Monitor Communication Equipment Barricade equipment.	Daily

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<p>Cupola <u>Bottom Doors Closed</u> #50110-101 (Gray) #50110-301 (Ductile)</p>	<p>Permit Required</p>	<p>Extreme temperature Possible toxic atmosphere (historic low level of CO on entry) Fall hazard greater than 4 feet Electrical equipment for mechanical & making repairs</p> <p>Non-Production Entry Only 1. Complete a bottom drop procedure 2. Perform lockout on all equipment, including level gauges 3. Spray and purge for minimum of 3 hours 4. Air testing must demonstrate an acceptable air quality prior to entry</p>	<p>Multi Gas Air Monitor Body Harness Lifeline/rope Man basket with mechanical retrieval Communication Equipment</p>	<p>Weekly</p>
<p>Cupola <u>Bottom Doors Open</u> #50110-101 (Gray) #50110-301 (Ductile)</p>	<p>Non-permit</p>	<p>Extreme temperature Fall hazard greater than 4 feet Electrical equipment for mechanical & making repairs</p> <p>1. Complete a bottom drop procedure 2. Perform lockout on all equipment, including level gauges 3. Allow cooling time. 4. Air testing must demonstrate an acceptable air quality prior to entry</p>	<p>Body Harness Lifeline/rope Man basket with mechanical retrieval Monitor may be worn on person.</p>	<p>Weekly</p>
<p><u>Hot Oil Heat Exchangers</u> # 50130-115 # 50130-216 (Duct East) #50130-217 (Duct West)</p>	<p>Non Permit</p>	<p>Mechanical & Electrical hazards (rotating pulluys & fan blades)</p> <p>1. Lockout related equipment 2. Use GFCI protection do to wet conditions</p>	<p>Ground fault protection for portable equipment Ladder</p>	<p>As needed for Inspection</p>
<p><u>Thermal Oil Expansion Tank</u> #50130-101 (Gray) #50130-201 (Ductile)</p>	<p>Permit Required</p>	<p>Fall hazard > 4 feet High temperature</p> <p>1. Lockout / Block incoming lines 2. Empty Contents (oil) 3. Allow cooling time. 4. Air testing must demonstrate an acceptable air quality prior to entry</p>	<p>Multi Gas Air Monitor Portable ventilation equipment Ladder</p>	<p>As needed for Maintenance Only</p>
<p><u>Recuperator</u> #50130-110 (Gray) #50110-211 (Ductile)</p>	<p>Permit Required</p>	<p>Fall hazard > 4 feet High temperature Possible toxic atmosphere (CO) Mechanical /Electrical Equipment</p> <p>1. Purge and allow system to cool for 24 hours 2. Lockout of related machinery 3. Air testing must demonstrate acceptable air quality</p>	<p>Entry via bottom hatch; there is a top hatch but usually too hot to enter</p> <p>Multi Gas Air Monitor Body Harness Lifeline/rope</p>	<p>As needed for Maintenance Only</p>
<p><u>Recuperator Duct</u></p>	<p>Permit Required</p>	<p>Toxic Atmosphere (carbon monoxide) Fall hazard into bughouse inlet or recuperator</p> <p>1. Lockout related equipment</p>	<p>Multi Gas Air Monitor Body Harness Lifeline/rope</p>	<p>As needed for Maintenance Only</p>

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		2. Allow cooling time 3. Air testing must demonstrate acceptable air quality	Portable lighting	
Rolling Furnaces #50110-179 (#1 South) #50110-189 (#2 Middle) #50110-194 (#3 North)	Non-permit	Fall hazard (bottom openings if inductors are removed). Extreme temperature. Dust and noise during relining process. Movement of furnace. 1. Lockout hydraulic mechanism for furnace 2. Pin furnace to prevent movement 3. Block opening in bottom of furnace when inductors are removed (Fall Protection) 4. Provide continuous ventilation during refractory work 5. Ground fault protection for portable electrical equipment used inside furnace	1. Fall protection when inductors are removed 2. Portable ventilation 3. Ground fault protection for portable equipment 4. Double hearing protection may be required	As Needed for repair
Furnace Pits With No Production in Entire Melt Dept.	Non-permit Ventilation	Fall hazard (if barricades are removed). Extreme temperature. Movement of furnace. Electrical hazard (inductors) Engulfment hazard (water cooling lines could bust and fill pit) 1. Lockout hydraulic mechanism for furnace. 2. Lockout inductors to prevent electrocution. 3. Ground fault protection for portable electrical equipment used inside pit. 4. Provide continuous ventilation. 5. Furnace must be pinned to prevent movement.	Multi Gas Air Monitor Portable ventilation equipment Ladder	As needed for Maintenance Only
Furnace Pits During Production Cupolas on Relief Bull Ladle NOT Tapping	Permit Required	Fall hazard (if barricades are removed). Extreme temperature. Movement of furnace. Electrical hazard (inductors) Engulfment hazard (water cooling lines could bust and fill pit) 1. Lockout hydraulic mechanism for furnace. 2. Lockout inductors to prevent electrocution. 3. Ground fault protection for portable electrical equipment used inside pit. 4. Provide continuous ventilation. 5. Furnace must be pinned to prevent movement.	Multi Gas Air Monitor Portable ventilation equipment Ladder	As needed for Maintenance Only
Combustion Air Fan #50110-119 (Gray) #50110-319 (Ductile)	Permit Required	Mechanical hazard (rotating blades) Possible toxic atmosphere (CO) Extreme temperature. 1. Lockout related equipment 2. Allow cooling time 3. Air testing must demonstrate an acceptable air quality	Multi Gas Air Monitor Portable ventilation equipment Portable lighting Non-Production Entry Only!	As needed for Maintenance Only
Combustion Chamber #50110-114 (Gray) #50110-314 (Ductile)	Permit Required	Connected to cupola, extreme temperature Possible toxic atmosphere, historically has carbon monoxide Refractory work may require blasting, chipping, etc. inside space Fall hazard into vertical ductwork. 1. Purge and allow system to cool for 24 hours 2. Lockout system to ensure burners cannot be started 3. Air testing must demonstrate an acceptable air quality	Multi Gas Air Monitor Body Harness Lifeline/rope	Weekly

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When entering with a contractor, ensure they following WF entry procedures				
<p>Exhaust stack And Main Exhauster #50110-175 (Gray) #50110-375 (Ductile)</p>	<p>Permit Required</p>	<p>Stack connected to main exhauster High temperature Possible toxic atmosphere from residual gases from emission system 1. Purge with main exhauster 2. Perform lockout on all related equipment 3. Air testing must demonstrate acceptable air quality</p>	<p>Enter via hatch door @ bottom of stack Multi Gas Air Monitor Body Harness Lifeline/rope</p>	<p>As needed for Maintenance Only</p>
<p>Charge Tunnel Sump #55001-104</p>	<p>Permit Required</p>	<p>Collects ground water from around pit Electrical equipment in wet environment Toxic or lack of oxygen in atmosphere possible Greater than 4 feet deep 1. Empty water from bottom of pit 2. Perform lockout on all related equipment 3. Air testing must demonstrate acceptable air quality 4. Use ground fault protection on portable equipment in pit 5. Provide external barriers to prevent fall into manhole</p>	<p>Top manhole entry Multi Gas Air Monitor Body Harness Lifeline/rope Mechanical Retrieval Device External barriers</p>	<p>As needed for Maintenance Only</p>
<p>Mote return tank (Cupola Shell Water)</p>	<p>Permit Required</p>	<p>Engulfment Possible toxic atmosphere, history of carbon monoxide- probably Related to slag belt that runs above tank Fall hazard greater than 4 feet 1. Empty contents of tank, block inflow lines 2. Remove slag from overhead belt and lockout 3. Air testing must demonstrate acceptable air quality</p>	<p>Multi Gas Air Monitor Body Harness Lifeline/rope Mechanical Retrieval Device</p>	<p>As needed for Maintenance Only</p>
<p>Converter Shell</p>	<p>Non-permit</p>	<p>Hazard of movement if lifted by crane. Hazard of lid closing on entrant 1. Lock out ladle repair crane. 2. Lock or tie lid back.</p>	<p>Ladder</p>	<p>Daily</p>
<p>Roto Mixer</p>	<p>Non-permit</p>	<p>Mechanical hazard (Rotating blades / paddles) 1. Empty contents of tank, block inflow lines 2. Lockout mixer</p>	<p>Locks</p>	<p>Weekly</p>
<p>Melt GMD Baghouse #59199-101 (Gray GMD) #59199-531 (Ductile GMD) #59199-534 (Melt Fugitive) Top Section Only</p>	<p>Non-permit Ventilation Procedure</p>	<p>Pulse Valves Dusty atmosphere Ventilation Procedure Required 1. Lockout all related equipment 2. Continuous ventilation required, a portable blower may be necessary 3. Air monitoring must be acceptable prior to and during entry 4. No hot work is allowed while bags are in place</p>	<p>Multi Gas Air Monitor Ventilation- system or portable Non-Production Entry Only!</p>	<p>Weekly</p>
<p>Melt GMD Baghouse #59199-101 (Gray GMD)</p>	<p>Permit Required</p>	<p>Toxic atmosphere Oxygen deficient</p>	<p>Multi Gas Air Monitor Ventilation- system or portable</p>	<p>Weekly</p>

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#59199-531 (Ductile GMD) #59199-534 (Melt Fugitive) Bottom & Middle Section Only		Entrapment Dusty atmosphere Baghouse dust collectors are pulling air from the mold cooling lines and may have low level carbon monoxide Ventilation Procedure Required 1. Lockout all related equipment 2. Continuous ventilation required, a portable blower may be necessary 3. Air monitoring must be acceptable prior to and during entry 4. No hot work is allowed while bags are in place	Non-Production Entry Only!	
Limestone & Coke Bins	Permit Required	Mechanical hazard Fall hazard greater than 4 feet (approximately 25 deep) Entrapment Engulfment Dusty atmosphere Possible low oxygen Empty contents of space Lockout all related equipment - belts Air testing must demonstrate acceptable air quality	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device 2-way radio	2x Year
Hot Well Tank #50110-145 (Gray) #50110-346 (Ductile)	Permit Required	Fall hazard greater than 4 feet Engulfment Mechanical hazard 1. Lockout related equipment 2. Empty contents of tank 3. Block incoming water flow 4. Use GFCI protection do to wet conditions	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting	Annual
Cold Well Tank #50110-147 (Gray) #50110-348 (Ductile)	Permit Required	Fall hazard greater than 4 feet Engulfment Mechanical hazard 1. Lockout related equipment 2. Empty contents of tank 3. Block incoming water flow 4. Use GFCI protection do to wet conditions	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting	Annual
Cooling Tower 50110-150 (Gray) #50110-350 (Ductile)	Non Permit	Mechanical & Electrical hazards (rotating pulluys & fan blades) 1. Lockout related equipment 2. Use GFCI protection do to wet conditions		As needed for Inspection
Dehumidification Unit #10015284 South End (Rotary Dryer)	Permit Required	Extreme Heat Atmosphere may be toxic Rotating parts 1. Entry via side man door 2. Air testing must demonstrate acceptable air quality 3. Lockout rotating drum and intake diversion valve. 4. Portable blower may be necessary.	Multi Gas Air Monitor Portable lighting	As needed for Inspection

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		5. Air monitoring must be acceptable prior to and during entry.		
Dehumidification Unit #10015284 North End (Filter Access)	Non Permit	Hot ambient air High air flow 1. Entry via east side man door. 2. Entry door has interior safety latch for egress.	Goggles Recommended, Gloves Portable lighting	Daily
Cupola Wind Drum #50110-107 (Gray) #50110-307 (Ductile)	Permit Required	Extreme Temperature Extreme Forced Air Possible low level carbon monoxide 1. Cupola shutdown procedure. 2. Lockout related equipment. 3. Lockout blast blower. 5. Air monitoring must be acceptable prior to and during entry.	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting Non-Production Entry Only	As needed for Inspection
Cupola Gas Take Off #50110-110 (Gray) 50110-310 (Ductile)	Permit Required	Extreme Temperature Extreme Forced Air Toxic atmosphere (Carbon Monoxide) Fall hazard into cupola and quencher 1. Lockout related equipment. 1. Cupola shutdown procedure. 2. Allow cooling time. 3. Air monitoring must be acceptable prior to and during entry.	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting Non-Production Entry Only	As needed for Inspection
Cupola Bustle Water Drain Shell Water ON	Permit Required	Fall hazard greater than 4 feet (approximately 6' deep) Entrapment (Tapered Sides) Engulfment (Flowing Water) Possible low level carbon monoxide	Multi Gas Air Monitor Body Harness Ladder	Weekly
Cupola Bustle Water Drain Shell Water OFF	Non Permit	Possible low level carbon monoxide Fall hazard greater than 4 feet (approximately 6' deep) Entrapment (Tapered Sides)	Ladder Body Harness	
Coarse Grain Separator	Permit	Connected to cupola, extreme temperature	Multi Gas Air Monitor	Weekly

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#50100-125 (Gray) #50100-326 (Ductile)	Required	Possible toxic atmosphere, historically has carbon monoxide Refractory work may require blasting, chipping, etc. inside space Fall hazard into vertical ductwork. 1. Purge and allow system to cool for 24 hours 2. Lockout system to ensure burners cannot be started 3. Air testing must demonstrate an acceptable air quality *When entering with a contractor, ensure they following WF entry procedures*	Body Harness Lifeline/rope	
Blast Duct Gray Ductile	Permit Required	Extreme Temperature Extreme Forced Air Possible low level carbon monoxide 1. Allow cooling time. 2. Lockout related equipment. 3. Lockout blast blower. 5. Air monitoring must be acceptable prior to and during entry.	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting Non-Production Entry Only	As needed for Inspection
Blast Blower #50110-162 (Spencer) #50110-363 (Robinson)	Permit Required	Extreme Temperature Extreme Forced Air Mechanical hazard (fan blades) 1. Allow cooling time. 2. Lockout related equipment. 3. Lockout blast blower. 5. Air monitoring must be acceptable prior to and during entry.	Multi Gas Air Monitor Body Harness Mechanical Retrieval Device Portable lighting Non-Production Entry Only	As needed for Inspection