


Hazard Analysis CONVERGENT SYSTEMS

	System	Hazard Description	Risk before Mitigation Measures			Risk Elimination or Mitigation Measures	Risk After Mitigation Measures			PPE TO BE USED
			Severity	Likelihood	Risk Hazard Index		Severity	Likelihood	Risk Hazard Index	
1	Mobilization of Personnel, vehicles, Equipments & Delivery of material to job site.	Physical hazard while handling material. • Working at height. • Struck by moving vehicle. • Unskilled Labor • Unconditioned / damaged Equipment • Vehicle accident	III	B	4	Compliance on PTW requirements to be ensured. • Trained and competent person to be monitored. • Conduct TBT to all craftsmen involved in the work activities. • Compliance with GNFC safety requirements to be ensured. • Only competent and licensed drivers to deliver material at site. • Driver to be made aware of requirements and deliver to designated area only. • Ensure all personnel are properly trained and competent with appropriate PPE. • Ensure the equipment/trailer	I Catastrophic	E Extremely Unlikely	12	Basic PPEs (Safety helmet, Safety Glass, Leather gloves, Safety Shoe) • Full body harness • Respirator • Dust coverall
2	Fabrication of plate and structure material. Welding, cutting & grinding (Hot Work) if	Hot work • Careless handling of lighted cutting torch, hot particles may cause burns. • Using cutting torch too close to combustible materials / personnel. • Gas leaking from hoses / valves or flash back arrester	II	A	3	Plasma cutting should be carried out in an isolated area. • Enough drinking water should be made available in the fabrication yard. • Proper breaks should give to the employees engaged in the plasma cutting. • Flask back arrester at both sides shall be used for gas cutting set. Wear protective clothing, gauntlets, face shield and welding glass along with other regular PPEs. • Ensure to have proper fire blanket and barricade. • Keep suitable fire extinguisher nearby with a fire watch. • Keep hoses clear of sharp edges & abrasives. • Do not allow hot metal or spatter to fall on hoses. • Clamp the work piece, don't hold it by hand. • Work in safe location and maintain safe distance of at least 5 feet distance between two personnel	III	B	7	
3	Hot work (welding, cutting grinding)	flash in eyes burr in eyes	III	B	9	WEAR SAFETY GOGGLES AND WELDING GOGGLES	IV	E Extremely Unlikely	20	Basic PPEs • Rubber Gloves
4	Cutting of steel using bar cutting machine	• Crush Injury • Hit the men due to temper.	II	A	3	Ensure all personnel have undergone Site Safety Induction. • Ensure PTW Issued by the PMC before starting the work. • Deploy trained worker for to cut the steels • Tool Box Talks to be conducted before start of the activity. • Ensure the machine is inspected by EHS dept before entering to site and color coded. • Ensure safety guard provided for the rotating parts of machine. • Pedal guard/Hand lever protection against accidental activation • Ensure cover guard protection	IV	C	18	Basic PPEs
5	INSTALLATION OF TRANSPORTER	FALLING DOWN	II	B	5	Safety belts to be used enough manpower top be deployed while installation	III	D	14	Basic PPEs • Fall arrestors • Full body harness
6	Painting work ON structure	Fall of person from height	II	B	5	Only trained employees should be engaged in working at height. • Employees should be medically fit for working at height. • Working at Height permit should be taken prior to starting the work. • FBH shall be provided for height work. • If ladders are used, it should be secured prior to start working on it. • Proper life lines should be installed and used while working	III	D	14	Basic PPEs • Fall arrestors • Full body harness
7	Painting work ON structure	Exposure to paint fumes	III	C Occasional	11	Sufficient ventilation should be maintained at the place of painting. • Canister masks should be provided & its use should be ensured. • No hot work should be carried out in the nearby confined spaces without gas testing. Use calibrated gauge in the pump. Ensure proper supervision at all times • Use calculated value of pump pressure in case of bolt tensioning.	III	D	14	Canister masks
8	Torque /tensioning	Pressurized system • Bursting of hoses. • Personal injury	II	B	5	Release pressure in hose before disconnection. • Barricade area at ground level to prevent unauthorized entry. • Tommy bar should be tied with rope to prevent falling.	III	D	14	Basic PPEs

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9	Hydro Testing/pneumatic test if required.	<ul style="list-style-type: none"> Slip/trip/fall Pinch hazards Over pressurization Personnel injury due to hose rupture. Unauthorized entry 	III	B	4	<ul style="list-style-type: none"> Valid work permit shall be obtained from GNFC before start of work. All employees/ workers should wear necessary PPES. Ensure proper housekeeping around the area Ensure TBT meeting before start of work. Inspect to all equipments before use at site. Barricade the work area. Display related safety sign / caution boards. Use leather gloves Use calibrated and certified pressure gauges only. Use certified and pressure tested hoses for hydro test. Ensure the hose connected properly with whip check and safety pin fixed. 	III	D	14	Basic PPEs																					
10	Confined Space Entry for cleaning and repair activities (if required)	<ul style="list-style-type: none"> Sharp surfaces Possible hydrocarbon vapors present. Insufficient Oxygen Levels. Insufficient light. Slippery surfaces 	II	C Occasional	6	<ul style="list-style-type: none"> Inform all adjacent groups prior to start of work. Obtain a valid Permit to Work as well as a Confined Space Permit Issued at the site Ensure PTW is in place and ensure check for Gases and shall ensure that Oxygen 20.8% & LEL - 0% which need to be monitored continuously. All crew members working in confined space shall be trained. 	IV	D	19	Hard hat, safety glasses, Dust mask, coverall, Rubber gum boots, Leather																					
11	Working at night	<ul style="list-style-type: none"> Poor visibility Slipping and Tripping hazard Lack of supervision 	II	C Occasional	6	<ul style="list-style-type: none"> Ensure night work permit Ensure adequate illumination Hoses cables should be laid in proper manner. Paint box should be removed from the scaffolding platform on daily basis. Platform should be maintained uniform & steps should be avoided. Proper lighting arrangements should be made at each 	IV	D	19	Safety helmet, Safety Goggles, Respirator Dust coverall, Leather gloves,																					
12	Housekeeping	<ul style="list-style-type: none"> Possible slipping and falling of personnel 	IV	A	13	<ul style="list-style-type: none"> Ensure frequent cleaning of work station from obstructing, unwanted material / objects and slippery floor. Any spillage should be cleaned up immediately and stored into approved container. Make sure that hoses used are arrange in such a way that it will not pose a tripping hazard during the housekeeping job 	IV	D	20	Safety helmet, Safety Goggles, Respirator Dust coverall, Leather gloves,																					
PREPARED BY : MANDAR DESHPANDE							 <p align="center">For CONVERGENT SYSTEMS PROPRIETOR</p>																								
Description		Hazard Severity																													
Catastrophic		Death or serious injury to the public.																													
Critical		Major property damage to the public, major																													
Marginal		Minor injury to the public or minor safety																													
Negligible		Not serious enough to cause injury to the public																													
Description		Individual Item																													
Frequent		Likely to occur often in the life of an item, with																													
Probable		Will occur several times in the life of an item,																													
Occasional		Likely to occur sometime in the life of an item,																													
Remote		Unlikely but possible to occur in the life of an																													
Extremely Remote		So unlikely, it can be assumed occurrence may																													
Category 1 - High (1-6,8). Elimination or mitigation actions must be taken to reduce the risk.																															
Category 2 - Low (7,9-20). Risk is acceptable.																															
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