Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity?	mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)	X
Assessed by:								Date:				Version:	
Approved by								Review due date:				Last review date:	
Reference:								Last review by:					

Category of Risk	Risk
H = Health	L = Likelihood
S = Safety	S = Severity
E = Environment	RL = Risk Level

Risk Level		Weight
High	The activity must not progress until controls are put in place to adequately manage the risks. The activity may proceed when the residual risk level is reduced to "Medium."	7
Medium	Work may proceed when the identified controls are in place. A safe system of work, method statement, safe working instruction, or equivalent, shall support these activities – see Standard "HSE&S Activity Based Risk Assessment" (SA-M-02-03) for more information.	3
Low	Work may proceed when the identified controls are in place.	1

NOTE: An assessment of local conditions, e.g., Stop! Take 5, must be made and additional control measures implemented if identified as necessary.

HSE INDUCTION TRAINING -:

1.Locate your nearest Safe Assembly Point before starting the work. Nearest Assembly Point No.01 & 08 .
2.Nobody shall enter inside company premises under the influence of Alcohol or drowsy drugs.
3.Fighting, Gambling and taking alcohol is not prohibited in company premises
4.Smoking and chewing tobacco is prohibited in company premises
5.In case you observe any emergency and emergency siren will be sounded in wailing mode for 1 min.
•Report emergency through local land line phone on 4000/4002 with your location and type of emergency.
•If dialing from mobile, pls dial: 0265 672 4000/4002
•Keep away from emergencies like fire and explosion
6.In case of injury or ill health, first aid box is available in each shop.
7.Full-fledged Occupational Health Centre with qualified nursing staffs and doctor is available at location
8. Cool Drinking Water, Wash Rooms and Canteen facilities are available.
9.Do not try to tress passing in premises.
10.Always enter in premises through valid Entry Pass
11.Person with Visitor pass will not be allowing to perform any work
12.Disciplinary actions will be recommended to HR/IR/Admin on defaulter or those who refused to co-operate
13.If you found any hazard, report to your immediate supervisor.
14.If you meet with an incident, report immediately to your supervisor and to receive First aid and medical assistance, if require

MANDATORY CONTROL MEASURES -:

1.Stop Take-5 meeting is conducted among work party by HEIL/Contractor Supervisor and to discuss about activities to be perfomed, associated risks and control measures as per ABRA
2.If planned activity is not covered in the ABRA, then list down newly identified Risks and Controls and discuss among work party
3.Afterwards, update existing ABRA to mention newly identified Activity, associated Risks and Control Measures with revision update. Updated ABRA will be shared to all and acknowledgement will be taken on last sheet of the updated ABRA.
4.Use of Mobile phone is not permitted during work.
5.Medical health checkup of all workmen.
6.Continuous supervision till completion of work is ensured these activities
7.Minimum required PPEs - Safety Helmet (EN-397/IS-2925) and Safety Shoes with Composite/Steel Toe(EN-345/IS-15298), Reflective jacket are used, while at work location. Additionally, wearing of work specific PPE as identified against the Task of the ABRA is ensured.

Task	Step	Risk	Category of Risk			Initial Risk			Control Measures Must be implemented to reduce risk As Low As Reasonably Practicable (ALARP).	Residual Risk		
			H	S	E	L	S	RL		L	S	RL
Site Mobilization and cleaning activity at work place.	Allot the place to vendor for site office and store arrangement open store for materials storage and handover the project layout and work place area.	Ph- Lake of knowlage of alloted area and work palce and access		X		2	2	12	**Engineering Control;** Before mobilization HE execution team will provide the identified areas to vendor for office setup and open store yard and als o provide the working area and PPES zone. **Admin control** ; Before start the work take the induction training for understood the min basic safety requirement and do & don'ts and safety rules.	1	2	2
	Manually through hand tools cleaning and removing the unwanted materials from site like glass, MS, PVC, debris, alu, garbage, grass,paper vegetation etc.	(Ph) Cut injury due to sharp edges during the handling.		X		3	2	18	**Admin Control**:All sharp materials should be kept in separate areas with proper signage. **PPEs**; Use the cut resistance class 02 hand gloves for handling the sharp materials.	3	2	18
		(PH)Slip and trip due to poor access.		X		2	2	12	**Administrative Controls:** Materials shifting route to be clearly identified and any obstacle materials to be remove from access area.	1	2	2
		(Ph) Poor illumination / visibility		X		3	2	18	**Engineer control:** sufficient illumination should be available at work place.	2	2	12

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply									
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								
	Working in Extreme weather conditions and continuous Monsoon	(Ph) Water logging and slippery access		X		2	2	12	**Engineer control:** Provide the proper safe access for construction work and ensure the level should be not below from FGL and should be clear the water exit route . Pprovide the water absorbing soil in working and access area. **Admin control;** Prepare the plan for monsoon precautions and provide the sufficient score to work men like gumboots and raincoat and emergency light and proper waterproof shed to workmen	1	2	2
		Ph-Fall the tree and fly the loose shed and structure due to heavy wind		X		3	2	18	**Engineer control:** All temporary shed and store should be proper fixing with sufficient screw and welding suport and don't use the temporary shed and dont keep the sheet and loose materials without tied. **Admin control**: Don't rest under tree during the bad weather and rainy conditions. Give the instruction to workmen during the stop take 5 that do & donot during the mansoon.	2	2	12
	Transport and construction vehicles and machinery movement during the monsoon.	PH-Fall and tilt the vehicle due to loose soil and poor access.		X		3	3	27	Engineering control: Identify the route for man and vehicle and machinery at constrution site.And ensure that before enter the transport vehicle and other construction machines like crane, excavator , RMC etc ensure the ground condition and proper compaction. Don't allow the vehicle movement on mud and backfill soil. Ensure the availability of banksman/signalman durinthe vechile movement. Provide the wheel stoper during the park of vechile.	1	3	9
		(Ph) injury due to unloading activity of material near work location		X		1	2	2	**Administration Control :** barricade should be provided at work location to prevent the injury due to unloaoding of another material. Site manpower will be not take rest near by unloading area. All manpower should be aware about that area and its hazards.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)		X		
Assessed by:									Date:				Version:				
Approved by									Review due date:				Last review date:				
Reference:									Last review by:								

Task	Step	Risk	Category of Risk			Initial Risk			Control Measures	Residual Risk		
			H	S	E	L	S	RL	Must be implemented to reduce risk As Low As Reasonably Practicable (ALARP).	L	S	RL
	Electrical distribution and operating the electrical operated machinery during the mansoon at construction site.	PH- Chance of electrical shock		X		3	3	27	•Power cable should be double insulated and free from temporary joint. If we cannot avoid the joint than use the industrial male female socket (IP-67) for cable jointing. •Power supply must be routed through 30mA ELCB/RCCB. •Power cables should be laid through safe route and protected from wet ground & logging water. •Ensure that all electrical panel, Portable Distribution boards and electrically operated indoor and outdoor machine/equipment's are connected to earth pit with proper connection. •Ensure all power cable termination with proper tightness and lug and gland. •Ensure the availability of electrical rubber mat of required rating in front of electrical panel and distribution board. •Electrical DB/Panels should be protected with rain and logging water, and panel and equipment's are with outdoor specification •Check all ELCB healthy condition through ELCB tester. •All electrical equipment's should be with proper preventive Maintenance and fit as per our inspection checklist. •Ensure the proper safe access/approach up to electrical board/panels and machinery for operating and on /off in any emergency situation. •Electrical connection and other electrical related activity will be carried out by authorized person/electrician with all required PPEs.(electrical related safety shoes and other PPEs as per PPES matrix) PICW trained person (EAP & ECP) and technician should be with wiremen license. •Ensure and recheck the condition of all emergencies stop switch which are installed for machinery. •Follow the electrical 7 step during the electrical work and ensure the close supervision. •Don't allow the work with wet hands/body and cloth of person. •Create the safe access free from slip & trip and mud for man movement and till electrical panel and Distribution board at RE project site. •All electrical machinery like welding machine , mixer machine, vibrator, grinder	2	3	18
	Continuous work in rain and wet body of workmen	Helath- chance of illness of workmen	X			3	2	18	Admin Control; Don't permit to work of workmen during the rain and with wet cloth. Provide the RO water for drinking. Houskeeping should be maintain at work place and rest room .	1	2	2
	Provide the Pipe barricading and green mesh surrounding work place and for entry restricted.	(Ph) Loose barricading		X		2	2	12	**Engineer control**: Vertical posts should be properly grouted and with anchored if the floor is RCC for straining. And horizontal pipe should be with proper clamp one is 600 mm form FGL and 2nd is 1100 from FGL. The pipe should be with color code yellow and black.	1	2	2
	Remove the vegetation and grass from site.	(Ph) Injury by hand tools and		X		2	2	12	**Engineering control**: use the proper safe hand tools. PPES: Use the cut level 02 hand gloves and safety gumboot during the work.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								

Trimming of tree branches/tree cutting	Identify the trees and work location and surrounding area for vehicle movement and which area will affected during the job.	(Ph) Man movement and other utility and materials in working area.		X		3	2	18	**Engineering control:** Ensure that working area should be cordonoff and entry restiscted for unathorized person. -Remove the business materials from under the tree. -Ensure the sufficent access for crane and MEWP movement. -Check the overhead hazards like power cable , presure line , fire fighting equipements etc. -Remove and protect the utility like fire, water and air line and also power cable which are crossing under the tree.	2	2	12
	Check the work location for working and access.	(Ph) Slip & trip due to not proper access.		X		2	2	12	**Administrative Controls**: Before start the work ensure the and identify the safe access for man and vehicle movement. If found any obstacles then remove from access area.	1	2	2
	Close the existing road and pedestrian path during the tree cutting. And remove the tree materials from running road an pedestrian path	(Ph) Movement and in working area and close the emergency access.		X		3	2	18	Admin control: Before starting the work and close the road and pedestrian path inform to admin team and take the permission for closing. And during the closing alternate emergency route should be communicate from user and same will communicate to emergency fire and security and OHC team.	1	2	2
	Shifting of MEWP/JLG & Farana at the place of work.	(Mech)Tilting of vehicle due to improper access route.		X		3	2	18	**Engineering control:-**Vehicle movement area is levelled and compacted **Administrative Control-** Man and vehicle Movement area is clearly identified and all obstacle materials are removed from access area.	2	2	12
		(Ph) Hit with the man or Object while Moving JLG to work location		X		2	2	12	**Admin Control:** Proper Guidence by signalmen to JLG operator	1	2	2
	Person go to height through MEWP/JLG and with fall protection equipement and strat the trimming of tree in Small small pieces by electric saw cutter machine	(Ph) Fall the perosn from height.		X		4	3	84	PPEs: Person must to be worn the fullbody harness and anchored the identified place on bucket railing and do the work. Safety helmet with chin stip and eye wear , nose mask and class B hand gloves and class B hand sleeve will use.	2	3	18
		(Meh)Tilt the MEWP due to uneven surface and overload.		X		3	3	27	**Engineering control:-**MEWP should be use as per SWL. and SWL should be mentioned at MEWP. - Ensure that all cable trench near wall are covered by plank. and dont movement MEWP on cover or cable trench. Administrative Control:- Ensure road condition not to be uneven Recheck condition of the road before use and ensure area to be free from other material .	1	3	9
		(Meh) Unstable working platform and without handrail. Not complete the Legal documents.		X		2	2	12	Engineering control:-Working platform should be in good condition with proper handrail and toe board. - Swing alram is in working condtion. Administrative Control:- - Ensure the Tag of SWL on MEWP. - MEWP work platform should be use as per SWL. - Ensure the all legal documents like 10 no from, Insurance copy, driver experience certificate, PM Preventive maintenance record etc. Authorized person will operate the MEWP.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
		(Meh) hydroaulic failure due to poor maintenance		X		3	2	18	**Engineering control:-** Preventive maintenance should be done as per manufacturer time line and maintain the record. and maintenance to be done in last six month. **Administrative Control:-** Ensure the third party test certificate (10 no from) by competent person.	1	2	2
		(Ph) Hit to an object and person during the swing .		X		2	2	12	**Administrative Control:** Swing area are barricaded and ensure the swing alarm also. And dont kept any material in swing zone area.	1	2	2
		(Elec) Potential contact with overhead services, e.g., electrical		X		3	2	18	**Engineering control:** If any overhead line than use the SWD line . And avoid the route and near overhead line .	2	2	12
		(Ph)Adverse weather conditions, e.g., high winds		X		3	3	27	**Administrative Control:** Ensure that don't plan the height work in bad weather rain, high wind velocity.	2	2	12
		(Ph)Lack of adequate lighting		X		2	2	12	**Administrative Control:** Ensure the sufficient lux level and adequate lighting arrangement don't plan the work in dark area	1	2	2
		(Ph) Fall loose materials and hand tools from height.		X		2	2	12	**Engineeirng controls:** All loose materials are kept in bucket /box and after complete the work remove the all materials from bucket. -All hand tools are tied with harness during the work.	1	2	2
		PH) Suspended load.		X		4	3	84	**Engineeirng controls:** Height work area and suspended load area to be barricading and don't allow the work under height activity. Entry restricted under suspended load area and barrication to it.	2	3	18
	Tree electric cutter/axe will be used to cut branches of tree. Workmen will start cutting with electric cutter machine and cut the knotted branch.After triming the tree Workmen will fix the sling to the main branches and fix it to farana hook. Put the guide rope before cutting and person will control the branch far from suspended area. Workmen will start cutting with electric cutter machine and cut the knotted branch than after will start cutting the main stem with electric cutter machine	((PH)Personal injury by hand tools.	X			2	2	12	**Engineering Control:**-Ensure that all hand tools are in good condition. **Administrative Control:** -Deploy only skilled person for work. **PPE**:Use Class 2 hand gloves during work.	1	2	2
		(Elec) Electric shock due to poor cable management and non-standard power tools		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -All power tools are in good condition and double body earthing if it is not double insulated. Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. **Administrative Controls**: All power tools are inspected as per Hitachi energy Checklist.	2	3	18
		(PH)Generation of wood dust	X			2	2	12	**PPE**:During the cutting work person is worn the face shield and nose mask for dust protection.	1	2	2
		(Ph)Eye injury due to flying wooden particles.		X		3	2	18	**PPEs**; face shield and nose mask and class C hand gloves must to be used during the work.	2	2	12
		(PH)Possibility of disturbing honeycomb settled on trees where the trimming / cutting activity is carried out.	X			3	3	27	**Admin control:** Check the honeycomb. if is there Removal of honeycomb is to be ensured before starting activity.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply										
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X				
Assessed by:								Date:				Version:						
Approved by								Review due date:				Last review date:						
Reference:								Last review by:										
	Trimmed branches will be pulled by farana	(Meh)Failure of lifting tools due to damage condition and overload.			X		3	3	27	**Engineering control:-** Check the weight of materials before unloading and if weight more than 2 ton then prepare the lift plan. Check the center of gravity. -Where eyebolts are used, they shall be connected vertically. E=3xB. Do not use for angled lifts **Administrative Control:**- All lifting tools are with inspection stage and SWL mark. and paste with inspection tag. -Sling shall be long enough to ensure a safe lifting angle which shall not exceed 90°. -Where the angle exceeds 90° the SWL or WLL is greatly reduced. -All lifting tools and tackles are valid third party test report (10 no from). -All lifting equipment, including lifting accessories, are to be stored in a safe manner to avoid being damaged. -Slings are connected by trained rigger. -All lifting accessories shall be inspected once every 12 months and a report of the inspection kept. -Ensure that the lifting hook is vertically above the center of gravity of the load. -Ensure the Register of lifting equipment including accessories	1	3	9
		(Ph) Personal Injury due to slippage of material and wrong lifting			X		2	2	12	**Administrative Controls:** -Ensure the availability of trained Signaler/Rigger and farana/crane Operator will follow the signals of Signaler/Rigger and Signaler will stand away from swing area of crane. -Ensure proper route access for the movement of farana/ crane. -Lifted load should be guide by two guide ropes to prevent toppling during shifting. -Ensure the farana/crane documents like RC book, Insurance, PUC, driver license, Fitness certificate (10 no form) to be valid and submit before use. -Crane/farana, JLG and Forklift should be fit as per ABB checklist. -Ensure no movement of workers near the movement of farana/crane.	1	2	2
		(Ph)Overturn of farana/crane due to overload and uneven ground			X		2	2	12	**Administrative Controls:** -Ensure the ground surface to be leveled for farana movement movement. -Ensure the weight of material to be lifted in permissible limit before lifting. -Ensure the SWL capacity of the farana/ crane before lifting the materials.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply									
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								

		(Meh) failure of farana due to poor maintenance and non-compliance of legal documents.		X		3	3	27	**Engineering control**: farana have with overload alarm, hoist limit switch reverse horn etc. -Farana is proper PM on time. -Farana is with hook latch. -Ensure that the farana is located on solid ground and that the outriggers and spreader plates or outrigger pads are fully deployed. -The farana shall have a fully operational automatic safe working load indicator and overwind protection "anti-two-block" **Administrative Control**:-Farana is fit and inspection as per HEIL checklist . - Experienced operator. - check the preventive maintenance record , insurance copy, driver license, PUC, third party load certificate (10 no form). -A competent person shall be used to both sling the load and to act as signaler to the farana operator	1	3	9
		(Mech) Man movement under suspended load.		X		4	3	84	**Administrative Control:-** Lifting and suspended area have barricaded and display the signage board for restricted entry. -Banksman and guide men are stand away from hanging load.	2	3	18
		(Ph) Hit the hanging load to man and other object.		X		3	2	18	**Engineering control:** Check the sufficient space for material handling. -Working area should be barricaded. -Provided the two guide rope min 10 feet length. calibrated rope should be use. **Administrative Control:**- Display the siganage board.	1	2	2
	After cutting the trees, workmen will cut it into small pieces and will properly stack at one place.			X		3	2	18	**EngineeringControl:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -All power tools is in good condition and double body earthing if it is not double insulated. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - ELCB is inspected by ELCB tester in every month. - Power cable connection are through lugs and gland. **Administrative Controls:** All power connection through by authorize electrician. -All power tools are inspected as per inspection cheklist before allowing first time and every month.	1	2	2
		(PH)Collapse of stack due to over height and improper sequence.		X		3	2	18	**Engineering Controls:-** Cut pieces have stacked properly size wise and don't height more than 5 feet. and provide the sufficient space between materials stack. **Administrative Controls**- During the materials removing from stack proper sequence have maintained. - Provide the barricading and signage board in store yard.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**														
	mark "X" one	Routine		Non-routine	X	Emergency		Who may be affected by this activity? mark "X" all that apply	Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:					Version:		
Approved by								Review due date:					Last review date:		
Reference:								Last review by:							
	Load all cut branches and stems by manually or by farana in truck/ tractor.	(Ph)Overturn of farana/crane due to overload and uneven ground		X		2	2	12	**Administrative Controls:** -Ensure the ground surface to be leveled for farana movement movement. -Ensure the weight of material to be lifted in permissible limit before lifting. -Ensure the SWL capacity of the farana/ crane before lifting the materials. PPES; During the branches and stems handling person are used the Class B hand gloves and class B hand sleeve.	1	2	2
		(Ph) Overload the transport vehicle and material from outside of body		X		2	2	12	**Admin Control:** Scrap wooden should not overload and vehicle and not in out form vehile body.	1	2	2
		(Mech) Man movement under suspended load.		X		4	3	84	**Administrative Control:-** Lifting and suspended area have barricaded and display the signage board for restricted entry. -Banksman and guide men are stand away from hanging load.	1	3	9
		(Meh) failure of farana due to poor maintenance and non-compliance of legal documents.		X		3	3	27	**Engineering control**: farana have with overload alarm, hoist limit switch reverse horn etc. -Farana is proper PM on time. -Farana is with hook latch. -Ensure that the farana is located on solid ground and that the outriggers and spreader plates or outrigger pads are fully deployed. -The farana shall have a fully operational automatic safe working load indicator and overwind protection "anti-two-block" **Administrative Control**:-Farana is fit and inspection as per HEIL checklist - Experienced operator. - check the preventive maintenance record , insurance copy, driver license, PUC, third party load certificate (10 no form). -A competent person shall be used to both sling the load and to act as signaler to the farana operator	1	3	9
		(Ph) Hit to person and other object by crane/farana during the material Shifting		X		2	2	12	**Administrative Controls:** -Lifted load should be guide by two guide ropes to prevent toppling during shifting -Ensure proper barrication and restricted entry in movement path while shifting -Ensure proper sinages board.	1	2	2
	Housekeeping will maintain after complete the job works.	(PH) Poor houskeeping		X		2	2	12	**Administrative Controls:-**Before leaving the site ensure the housekeeping and proper materials stacking. **Engineering Control:-** -Ensure good barrication proper house keeping. **PPE :** PPE to be used Cut level 2 Hand Gloves, nose mask, safety goggles etc.)	1	2	2
Material loading & unloading and shifting work by Manually.	Engage the man power for work	(Ph) Not aware about induction part		X		2	2	12	**Administrative Controls**: Before starting the work complete the induction training , stop take 5 daily basic., medical checkup to all workmen, PTW work. -Esnure the valid C pass for do the work.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**									Who may be affected by this activity? mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
	jointly inspection of area where unloading to be done and ensure that the area is free from any obstruction or hazard.	(PH) Slip trip and fall the person due to uneven & poor access.		X		2	2	12	**Administrative Controls:** Material shifting route to be clearly identified and all obstacle to be remove from access area and provide the safe access.	1	2	2
	Storage area to be develops by barricading, cleaning and displaying the signage board.	(PH) non restricted area due to not identified and barricading.		X		2	2	12	**Administrative Controls:** Open store yard have developed with proper pipe barricading and with signages board for materials stacking.	1	2	2
		(PH)Collapse of Barricade due to uneven surface and improper support.		X		2	2	12	**Engineering Control:** Area should be levelled and well compacted. -MS stand to be anchored or grouted with concrete properly. Horizontal pipe should be proper clamp	1	2	2
	Place the transport vehicle at material storage location by identified route.	(PH) hit to any person by vehicle		X		2	2	12	**Administrative Controls**: -Pedestrian have use the walk way. -Vehicle condition to be checked as per HEIL vehicle checklist and it should be with valid documents RC book, Insurance copy, PUC, Driver license, Fitness certificate etc. -Do not allow Mobile for using and keeping during driving. -Ensure the banksman availability for vehicle reverse and traffic control with red and green flag. -Allow only authorize/Trained person for operating vehicle. -Vehicle must have front and reverse horn -Do not guide any vehicle from front or back by standing in line of vehicle movement, Guide from the side away from vehicle.	1	2	2
		(PH) Overspeed		X		2	2	12	**Administrative Controls:** Follow the speed limit 15 KPH in Hitachi energy premises during vehicle transportation. -Pedestrian have use the walk way.	1	2	2
		(PH) Tilt the vehicle due to uneven access and ground.		X		3	2	18	**Administrative Controls:** Before engage the transport vehicle identified the vehicle route and man movement route, access area have clean and obstacle free.	1	2	2
		(PH)Road incident due to poor physically condition of transport vehicle and noncompliance of legal documents.		X		3	3	27	**Engineering control** : Ensure transport vehicle have back & front safety indicator horn when move reverse or front. **Administrative Controls:** -Vehicle condition to be checked as per Hitachi Energy vehicle checklist and with valid documents RC book, Insurance copy, PUC, Driver license, Fitness certificate etc. -Ensure driver have with Heavy license as per Govt vehicle act and issued by authorized Govt department. -Do not allow Mobile for using and keeping during the machine operate/driving. -Wear the seat belt during the driving.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply						
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)		X
Assessed by:									Date:				Version:		
Approved by									Review due date:				Last review date:		
Reference:									Last review by:						

	Barricade to restrict the unauthorized movement in work area.	(Ph) injury to unauthorized person		X		1	2	2	Elimination-NA Substitution-NA Engineering control- Provide barriacted to avoid unauthorized entry. Display the sign board of Unauthorized not allow. - Wheel stoper should be provided on vehicle. 'Administrative Controls: NA PPE- hand gloves cut level 2 , safety helmet , safety shoes.	1	2	2
Manual Material shiting.	Place the ladder to reach on vehicle to untie the ms chain to lift the material.	(Ph)poor access for vehicle		X		1	2	2	Elimination-NA Substitution-NA Engineering control- Place the proper ladder for vehicle. 'Administrative Controls: NA PPE- hand gloves cut level 2 , safety helmet , safety shoes.	1	2	2
		(Ph) Worker fall during the climb the ladder		X		1	2	2	Elimination-NA Substitution-NA Engineering control- Place the proper ladder for vehicle. Standard ladder should be used. 'Administrative Controls: Ladder should be inspected by HE before it used. PPE- hand gloves cut level 2 , safety helmet , safety shoes.	1	2	2
	Check the size and weight of material like MS steel, (angle channel), cable drum , jack for cable pulling, lighting panel, light, cable tray,DB, conduct pipe, Switch gears etc. Misc. Electrical consumable items, Ply , wooden , brickes, Block, Shuttering materails, Ms pipe, PEB small structure materails and nut bolt and other construction materails etc. & Load/Unload the material required for work in tractor/trolly/hand cart by manually.	(Ph)Over loading of material in tractor/trolly/hand cart.		X		2	2	12	**Engineering Control**: Ensure the weight of materials before starting the loading activity if weight is more then don't manually load the material and use the other resources. - Trolley,hand cart should not be oveloaded and materials loading should be under capicty of trolley. and materials should not come outside of tractor trollry and hand cart.	1	2	2
		(PH)Collision/Collapse due to long length of steel structure material and Cable Drum.		X		2	2	12	**Administrative Controls:** Before handling the long item site team have check the materials shifting route and turning point and engage one person for traffic movement controller with signage boards.	1	2	2
		PH) Back pain due to continues manually Loading/unloading	X			3	2	18	**Substitution**: Use the hand trolley for material handling instead of manual shifting if possible. **Administrative Controls:** If activity will continues then rotate the workers daily basic.	2	2	12
		(Ph) Cut injury due to not wear the PPE.		X		2	2	12	**PPE:** During the manual materails handling person is worn the Class B hand gloves .	1	2	2
	Cement bags to be carefully unload using MS hook and shifted by labors with carrying on their back.	(CH)Inhalation of cement .	X			3	2	18	**PPE:** Use nose mask, eye wear and Nitrile rubber hand gloves during the cement handling work	1	2	2
		Hygiene	X			2	2	12	Admin Control: Before eating and drinking, clean and wash hand and face with fresh water.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
	All materials will be stored in open store yard with stack in proper place and proper manner size and items wise.	(PH) Collapse the materials stack due to over height and not proper sequence.		X		2	2	12	**Engineering Controls:**- All construction materials have stocked properly size and item wise and don't height more than 5 feet. and provide the sufficient space between materials stack. **Administrative Controls**- During the materials removing from stack proper sequence have maintained. - Provide the barricading and signage board in store yard.	1	2	2
	Handling and loading and unloading the Small PEB structure , nut bolt , clit and angle , channel, tube etc	(PH- injury due sharp edges and not proper handling		X		3	2	18	Engineering control: provide the proper ladder for ascending and descending on trailer and truck. Loose materails should be proper storege free from collapse , do not stack in vertical stack postion. PPE: Provide the Class B hand gloves and Class B hand sleeve during the materials handling.	2	2	12
	After unloading and shifting work check and ensure the housekeeping and all man & materials to be remove form work place area.	(PH) Poor Housekeeping		X		2	2	12	**Administrative Control:**- Housekeeping is done before leaving the site.	1	2	2
	Shift the material manuallythrough hand pallet	(PH)Fall of material while shifting of material through hand pallet and it can injured some one.		x		2	2	12	**Administrative Control** -Materials storage area to be soft barricading. -Materials shifting route to be clearly identified and any obstacle materials to be remove from access area. -'If material is shifted by hand pallet, ensure the weight of material to be shifted is less than SWL of hand pallet, -Place the material on the hand pallet in such a way that it shall not topple while movement. -Before use of hand pallet trolley ,trolley to be inspected by Hitachi energy engineer. and Load test should be available and display the SWL capacity of trolley.	1	2	2
	Pipe barricading is to be done as per requirement by fixing MS stand of 1.20 mt height with anchor fastener or by grouting with concrete.	(PH)Collapse of Barricade due to uneven surface and improper support.		X		2	1	2	**Engineering Control:** Area should be levelled and well compected. -MS stand to be anchored or grouted with concrete properly. Horizontal pipe should be proper clamp	1	1	1
	Anchor fastener will fix by drill machine in RCC floor for vertical post.	(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)	X
Assessed by:									Date:				Version:	
Approved by									Review due date:				Last review date:	
Reference:									Last review by:					
		(CH)Inhalation / ingestion of dust	X			2	2	12	**Engineering control ;** All machinery should be with proper maintenance and good condition**.** **PPE:** Class A hand gloves and Eyewear and nose mask are used during the drill work.	1	2	2
	After fixing MS stand place the barricading pipe in MS stand by clamping the pipe with each other at about 0.5m to 0.6m and 1.0m to 1.10m height with orange net.	(PH)Iinjury by damage hand tools.		X		2	1	2	**EngineeringControl:** All hand tools are in good condition and damage free. **PPE**: Cut level 2 hand gloves are used during work	1	1	1
		(PH)Fall of Barricade pipe.		X		2	2	12	**Engineering Control:** All horizontal pipe are properly clamped with vertical post.	1	2	2
	Remove the barricading after completion of job and cut the anchor bolts by grinder machine.	(PH)Obstacle of anchor bolt and removed materials in passage		X		2	2	12	**Engineering Controls:**Remove anchor bolt immediatly after removing MS stand. -All materails are stocked properly in store area.	1	2	2
	Use the electrical operated grinder machine for cutting the anchor fastener after dismantling of barricading.	(Elec) Electrical shock and spark due to wrong and loose connection.		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls**: All power connection are through certified electrician.	1	3	9
		(Elec) Electrical shock due to damage condtion of grinder machine.		X		3	2	18	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. -Grinder machine is with safety cover and operating handle. **Administrative Controls:** All grinder machine are inspected as per HEIL Checklist.	1	2	2
		(Ph) Eye injury while cutting if not wear the proper PPEs.		X		2	2	12	**PPE:-** During the grinder operating face shield with attached safety helmet and, leather body apron , Iclass B hand gloves are used.	1	2	2
		(Mech) Unguarded Rotating part		X		3	2	18	**Engineering Control**: All Rotating part is covered by safety cage/ guard as per manufacturer recommended. -Wheel RPM is higher from machine RPM. Ensure do not use expire wheel check the both things before use and purchase (RPM or expire date). During the replacement of wheel machine should be disconnected permanently from socket. and during the lunch and break time also machine should be disconnected from socket. -Wheel should be proper tightness by standrad key with machine. Ensure the operating handle in grinder machine.	2	2	12
		(PH) Fire due to fire particles during the cutting.		X		2	2	12	**Elimination-** All flammable materials are removed from hot work area. - Fire extinguisher are available at work location. - Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply							
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

	After completing the job shift all the material to store.	(PH) poor housekeeping		X		2	1	2	**Administrative Control:-**Proper housekeeping to be done after completion of work.	1	2	2
Making GI sheet barricade including gate up to 3.0 mt height.	Hard barricading to be done with GI sheet having height of 3 mt.	(PH)Cuts or wounds due to contact with rough edges during the handling.		X		2	2	12	**PPE:** -Cut level 3 /class B type Hand gloves are used during handling of GI sheet.	1	2	2
	Erection of Vertical supports of 40/50mm Diameter round/square pipe @ 3.25m C/C and fixing of 3 Nos of horizontal purlin of RHS 40x40mm@ 1.30 mt C/C.	(PH)Fly the sheet due heavy wind		X		2	2	12	**Admin :** All GI sheet should be tied with rope or some weight materials should be keep on GI sheet.	1	2	2
	Vertical barricading support fixed in floor with anchor fastener or to be grouted in Ground	(PH)Collapse of Barricade due to uneven surface and improper support.		X		2	1	2	**Engineering Control:** Area should be levelled and well compected. -Vertical support to be anchored or grouted with concrete properly. -Barricading should be min 0.6 mtr away from pit edge.	1	1	1
		(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and without any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(CH)Inhalation / ingestion of dust	X			2	2	12	**PPE:** Cut level 2 hand gloves Eyewear and nose mask are used during the drill work.	1	2	2
	Cutting & welding work is to be done by grinder M/C & welding M/C if required for modification of vertical support.	(PH) Eye injury while welding and cutting.		X		3	3	27	**Administrative Control :** -Only skilled workers are allowed for welding and cutting work. **PPE:** -Face shield with attached helmet is used during welding work and black eyewear is used by helper during the welding work. Leather bodt apron , leather hand gloves must be used during the welding work. during the grinding activity lether body apron, face shiled with attched safety helemt cut level 2 class B hand gloves must to be wear.	1	3	9
		(PH) Burn due to welding		X		3	3	27	**Administrative Control:** -All flammable materials are removed from the welding work area. -It is ensured that fire extinguisher near hot work. -Only skilled workers are allowed for welding work. **PPE:** -Face shield with attached helmet is used during welding work and black eyewear is used by helper during the welding work. Heat+cut resistant class B hand gloves must to be use for handling the Hot structure.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**									Who may be affected by this activity? mark "X" all that apply				
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

		(Elec) Welding cable over heating		X		3	3	27	**Engineering Controls:** -It is ensured that all welding connections are through lug and proper size of cable as per current load and welding machine is with double body earthing. -Welding cable is without temporary joint and both ends are with insulated holder & lugs. -Only single and double phase welding machines are used during work. All terminal should be proper cover. **Administrative Control:** -Welding machine is inspected as per HEIL Checklist.	1	3	9
		(Mech) Unguarded Rotating part of grinder.		x		3	3	27	**Engineering Control**: All Rotating part is covered by safety cage/ guard as per manufacturer recommended. -Wheel RPM is higher from machine RPM. Ensure do not use expire wheel check the both things before use and purchage (RPM or expire date). During the replacement of wheel machine should be disconnected permanently from socket. and during the lunch and break time also machine should be disconnected from socket. -Wheel should be proper tightness by standrad key with machine. Ensure the operating handle in grinder machine.	1	3	9
	Erection of sheet will be done with help of A type ladder / MS table of minimum height 1.20mtr height.	(PH) Fall of person from MS stool due to uneven surface and without handraill		X		2	2	12	**Engineering Controls:** -MS stool is with handrail and ground surface are levelled .	1	2	2
	Fixing the GI sheet with self-threading screw by drill machine.	(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(Ph) Fall the barricading due to air wind velocity.		X		2	2	12	Admin control: Provide the sufficient screw surrounding of sheet and ensure the some space between two sheet for air pasing.	1	2	2
		(Ph) sharp corner of sheet.		X		3	2	18	Engineering control: Provide the edge protection sheet on corner and as L type and other solution for edge protection. And provide the night visible sticker on sheet. Radium sticker and sign out side of sheet	2	2	12
		(PH)Cut injury during handling of GI sheet		X		2	2	12	**PPE:** -Cut level 3 class B Hand gloves are used during handling of GI sheet.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply						
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)		X
Assessed by:									Date:				Version:		
Approved by									Review due date:				Last review date:		
Reference:									Last review by:						
	Remove the hard barricading after completing the job by manually. Remove sheet one by one by drill machine and thereafter remove Vertical support.	(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and without any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(PH)Cut injury during handling of GI sheet		X		2	2	12	**PPE:** -Cut level 3 Hand gloves are used during handling of GI sheet.	1	2	2
	Cut the anchor bolts by grinder machine.	(PH)Obstacle of anchor bolt and removed materials in passage	X			2	2	12	**Engineering Controls:**Remove anchor bolt immediatly after removingvertical support. -All materails are stocked properly in store area.	1	2	2
		(Elec) Electrical shock and spark due to wrong and loose connection.		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls**: All power connection are through certified electrician.	1	3	9
		(Elec) Electrical shock due to damage condtion of grinder machine.		X		3	2	18	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. -Grinder machine is with safety cover and operating handle. **Administrative Controls:** All grinder machine are inspected as per HEIL Checklist.	1	2	2
		(Ph) Eye injury while cutting if not wear the proper PPEs.		X		2	2	12	**PPE:-** During the grinder operating face shield with attached safety helmet and, leather body apron , leather hand gloves are used.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply							
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
		(Mech) Unguarded Rotating part		X		3	2	18	**Engineering Control**: All Rotating part is covered by safety cage/ guard as per manufacturer recommended. -Wheel RPM is higher from machine RPM. Ensure do not use expire wheel check the both things before use and purchage (RPM or expire date). During the replacement of wheel machine should be disconnected permanently from socket. and during the lunch and break time also machine should be disconnected from socket. -Wheel should be proper tightness by standrad key with machine. Ensure the operating handle in grinder machine.	2	2	12
		(PH) Fire due to fire particles during the cutting.		X		2	2	12	**Elimination-** All flammable materials are removed from hot work area. - Fire extinguisher are available at work location. - Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone.	1	2	2
	After completing the job shift all the material to store.	(PH) poor houskeeping		X		2	1	2	**Administrative Control:-**Proper housekeeping to be done after completion of work.	1	2	2
Material loading & unloading and shifting work (Portable cabin 2 no's (6mtx2.4mt, wt-1.7 tone) & (5.4mtx3mt,wt-1.9 tone) PEB vendor (Pota cabin size (8x8 ft), weight 1.5 Ton storeroom size(8x10ft), weight (2Ton) container type. by Mechanically with the help of farana/ crane weight upto to 5 ton. Placing and shifting ofv. By Farana	Clearly marked area for access of material, unload or load of structure and other material by farana/crane.	(PH) Tilt the crane due to uneven access and surface.		X		3	3	27	**Administrative Controls:** Vehicle movement route to be clearly identified and any obstacle materials to be remove from access area. -Ground surface area is leveled and compacted	1	3	9
	Segregation of materials as per packing list and drawing & and check the weight and size of materials.	(Meh) failure the lifting tools due to overload if improper knowledge of weight of materials.		X		4	3	84	**Engineering control:-** Check the weight of materials before loading/unloading and if weight more than 2 ton then prepare the lift plan. Check the center of gravity. and marking for lifting point. **Administrative Control:-** All lifting tools are with inspection tag and SWL mark. -All lifting tools and tackles should be valid third party test report (10 no from).	2	3	18
	Placed the farana/crane at work location.	(PH) Tilt the crane due to uneven access and surface.		X		4	3	84	**Administrative Controls:** Vehicle movement route to be clearly identified and any obstacle materials to be remove from access area. - Ground area should be leveled and compacted and don't allow the work on loose backfill soil and in Mud.	2	3	18
		(Ph) Hit to any pedestrian due to overspeed.		X		2	2	12	**Administrative Control**:- During the driving follow the 15 KPH speed limit in Hitachi energy premises. -All pedestrian is followed the walk way area.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								
	Connect the Sling by rigger and trained person and lift the load by farana/carne and shift to identified place.	(Meh)Failure of lifting tools due to damage condition and overload.			X			3	3	27	**Engineering control:-** Check the weight of materials before unloading and if weight more than 2 ton then prepare the lift plan. Check the center of gravity. -Where eyebolts are used, they shall be connected vertically. E=3xB. Do not use for angled lifts **Administrative Control:**- All lifting tools are with inspection stage and SWL mark. and paste with inspection tag. -Sling shall be long enough to ensure a safe lifting angle which shall not exceed 90°. -Where the angle exceeds 90° the SWL or WLL is greatly reduced. -All lifting tools and tackles are valid third party test report (10 no from). -All lifting equipment, including lifting accessories, are to be stored in a safe manner to avoid being damaged. -Slings are connected by trained rigger. -All lifting accessories shall be inspected once every 12 months and a report of the inspection kept. -Ensure that the lifting hook is vertically above the center of gravity of the load. -Ensure the Register of lifting equipment including accessories	2	3	18
		(Mech) Man movement under suspended load.			X			4	3	84	**Administrative Control:-** Lifting and suspended area have barricaded and display the signage board for restricted entry. -Banksman and guide men are stand away from hanging load.	2	3	18
		(Meh) failure of carne due to poor maintenance and non-compliance of legal documents.			X			3	3	27	**Engineering control:** Crane have with overload alarm, hoist limit switch reverse horn etc. -Crane is proper PM on time. -Crane is with hook latch. -Ensure that the crane is located on solid ground and that the outriggers and spreader plates or outrigger pads are fully deployed. -The crane shall have a fully operational automatic safe working load indicator and overwind protection "anti-two-block" **Administrative Control**:-Crane is fit and inspection as per Hitachi energy checklist . -Experienced operator. -check the preventive maintenance record , insurance copy, driver license, PUC, third party load certificate (10 no form). -A competent person shall be used to both sling the load and to act as signaler to the crane operator	2	3	18
		(Ph) Overhead hazards.			X			3	2	18	**Admin Control**: Check also for any overhead power lines or other structures and Ensure Crane is Protected from Overhead Power Lines	1	2	2
		(Mech) Finger pinch under load			X			3	3	27	**Engineering contro**l: Before resting the materials, ensure the packing under material, so that sling can removed easily.	1	3	9
		(Ph) Hit the hanging load to man and other object.			X			3	2	18	**Engineering control:** Check the sufficient space for material handling. -Working area should be barricaded. -Provided the two guide rope min 10 feet length. **Administrative Control:**- Display the siganage board.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								

Use the ROLTs	Arrangement of (ROLTs) Bopt/Stacker /Forklift/ faranaulic Trolly need to be used as per requirement or onsite situations	(Mech Poor preventive maintenance of machinery.		X		3	2	18	**Engineering control;** preventive maintenance is done on timely and maintain the record. All feature is in working condition like overload alarm, reverse horn, etc	1	2	2
		(Ph)Interface with pedestrian traffic and other vehicles on site, and Operating in areas where there is poor or no visibility, e.g., blind corners, alleyways;		X		3	3	27	**Administrative Controls**:Pedestrian and vehicle routes are clearly marked and clearly signed. - Pedestrians are segregated from vehicle routes by a physical barrier. -No person shall be allowed to stand or pass under the elevated portion of the ROLT,whether loaded or empty. -Beware of blind corners and alleyways.Blow the horn, drive slowly, and watch out for pedestrians and objects when turning at narrow corners.	2	3	18
		(Ph) Overturning of vehicle (ROLTS) due to poor condition of road surfaces and Operating on slopes or inclines		X		3	2	18	**Administrative Controls:** ROLTs movement route to be clearly identified and any obstacle materials to be remove from access area. - Ground surface /floor area should be leveled and compacted -The brake shall be applied at all times while raising and lowering the load. - Materials height is not more than from eye level. -another person is not stand behind the materials.	2	2	12
		(Ph) Fall the material due to Carrying of loads that are unstable or unsecured, overload.		X		4	3	84	**Engineering control**: -Make sure that the forks are centered when they are entering a pallet. -Do not move while the load is in an elevated position. -Do not put slings on forks.Do not allow the forks to protrude though a pallet. - This can damage what is on the other side of the stack. -The load is always rest against the heel of the fork arms. -This will ensure that the load center is in the right place. • Do not overload pallets.When putting the load down, always bring the load over the stack before tilting forward.• • Carry loads as low as possible and do not drive with forks raised. **Administrative Controls:**No persons are close to a ROLT while it is loading or maneuvering. -ROLTs are one-person vehicles. Do not carry a passenger at any time.When reversing – LOOK – behind you. Do not rely on rear vision mirrors only. If necessary, use a banksman.	2	3	18
		(Ph) Failure to wear seat belt		X		2	2	12	**Engineering Control:** During the forklift operation , operator is worn the seat belt.	1	2	2
	Give the wooden packing under materials and rest and disconnect the sling and guide rope.	(PH) tilt the stored structure materials due to not proper rest on ground.		X		3	2	18	**Engineering control:** Provide the proper wooden packing under structure materials for levelling. Ground area should be levelled. - Stored area should be proper barricading and signage board.	2	2	12
	After complete the activity remove the all materials from work location and close the permit.	(PH)Poor housekeeping		X		2	2	12	**Administrative Controls**: Ensure the proper housekeeping at work location before leaving the site.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity?	mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)	X
Assessed by:								Date:				Version:	
Approved by								Review due date:				Last review date:	
Reference:								Last review by:					

Task	Step	Risk	Category of Risk			Initial Risk			Control Measures Must be implemented to reduce risk As Low As Reasonably Practicable (ALARP).	Residual Risk		
			H	S	E	L	S	RL		L	S	RL
Structure material storage and manual handling for fabrication work. (like various size of angle,channel,chequer plate,beam,squar bar,rect angel,pipes and other ms structure) (Modification of MS gate)	First Check the work site area and ensure all the unwanted material is removed from the work site.	(PH) Chance of any incident due to not proper planning and communication with working another agency.		x		2	2	12	**Administrative Controls:-**Before start the work, execution team have decided & identified work area, and barricade the area clearly so that work can be executed easily. -Proper communicate with existing person regarding precaution , which are working there. -Display the signage board and entry restricted in working are.	1	2	2
	Store the struct materials at fabrication yard/place.	(Ph) fall the str materials due to improper stacking.		X		3	3	27	**Engineering control:** All structure materails are stacked with proper wooden and solid packing. Ground area are levelled and competed. Material stacked should be item size and length wise. **Admin Control:** Suffient space are available in between of materials for material handling or person movement.	1	3	9
		(Ph) Injury due to sparp edges.		X		2	2	12	**PPE;** During the structure and sharp material handling persons are used the cut level class B hand gloves.	1	2	2
		(Ph) Hit the material to an object and person during the handling.		X		2	2	12	**Admin Control**: Ensure the sufficent and good access for materails shifting and handling. -Other person or pedestrians are followed the identified walkway area.	1	2	2
	Using the Hand pallet for lifting the small struct materials.	(Ph) Tilt the pallet due to uneven access or overload material.		X		2	2	12	**Engineering control**; Hand pallet are tested by comptenet person and SWL tage are on trolley. -Materials are proper rest on pallet with center of gravity. **Admin Control:** Hand pallet are used as per SWL capacity.	1	2	2
Provide the distribution board and electrical connection to electrical operated machine like weld machine, grinder,cutter, hand and stand operated drill machine etc.	provide the power supply connction to all electrical operated machine through DB and power cable laying management system.	(Elec.) Electrical Shock due to poor electrical management.		x		4	3	84	**Engineering Control:** -All DB are metallic and proper fixed and portable DB are fix on MS Stand. -Electrical rubber mat are kept in front of DB. -Distribution board are weather and waterproof. -All female socket are IP67 and with indvior control, system /switch. -Power cable are connected with through proper gland or luges armor cable with matel galnd and insulated flexible cable with PVC gland. -All electrical distribution board with 30Ma ELCB and double body earthing. and all cable are double insulated. -Cables are overhead min 2 mtr height in working area. and cable route and marking are identified if armor cable are underground -insulated hook are used for overhead cable. **Admin control** : ELCB are tested by ELCb tester in every month. -Paste the danger signage board on DB. -All electrical connection are through authroized electricaian.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply						
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)		X
Assessed by:									Date:				Version:		
Approved by									Review due date:				Last review date:		
Reference:									Last review by:						

Structure welding by weld machine at ground and height. (Separtae ABRA will use for height activity.)	Welding work for various fabrication work and other as per requirement.	(Elec.) Electric Shock due to poor condition of welding machine.		X		3	3	27	**EngineeringControl:** -All welding machine are in good condition and double body earthing if it is not double insulated. -Ensure the all welding connection is through lug and proper size of cable as per current load and welding machine to be double body earthing. -Welding cable is without temporary joint and both end with insulated holder &lugs. -Welding machine is single phase either three phase don't use through two phase. -Welding machine is e fully body covered also terminal box. -Oil winding machine don't allow only should be used rectifier welding machine . **Administrative Controls:** All welding machine are inspected as per Hitachi Energy Checklist.	1	3	9
		(PH) Fire due to fire particles during the welding .		X		3	2	18	**Elimination-** All flammable materials are removed from hot work area. -Fire extinguisher are available at work location. -Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone. **Engineering control**:If welding work is going on at height than provide the cage by GI sheet for controlling the spread the fire particles.	2	2	12
		(Ph) Eye injury while welding ,if not wear the proper PPEs.	x			3	2	18	**PPE:-** -Welding face shield with attached safety helmet, leather body apron, leather hand gloves are used during the welding work and ensure the helper also wear the black googles during the work. - During the sharp structure handling, person are worn the cut level 2 or 3 hand gloves . -After complete the welding work, during the cleaning or cheaping of wedling joint, person use the eyewear.	1	2	2
		(PH) Injury due to use of nonstandard power tools.		X		3	3	27	**EngineeringControl**:-All hand tools is in good condition with proper grip and damage free. -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls**: All power tools are inspected as per Hitachi Energy Checklist.	1	3	9
		(Ph) Burn due to touching of hot object.		X		2	2	12	**Admin Control:**Hot objects are kept in separate area and don't touch direct. **PPE**: Use the heat resistance hand gloves.	1	2	2
		(Ph)Fall the structure beam during the fabrication.		X		3	3	27	**Engineering control:** All structure materails are stacked with proper wooden and solid packing. -Ground area are levelled and compected. -Material stacked should be item size and length wise. -All beam dont kept in vertical position and during the welding work if beam are in vertical position then a beam are inter connected or proper support by additional angle for fall protection.	1	3	9
		(Ph) Fall the loose material from height.		X		3	3	27	**EngineeringControl:** All loose materials are kept in box like welding rod cut peices. Hand toola are tied with harness. **Administrative Controls**: Work area are barricading don't movement under height activity. Displayed the warning signage board.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**									Who may be affected by this activity? mark "X" all that apply						
	mark "X" one	Routine		Non-routine	X	Emergency				Employees	X	Contractors	X	Other (list)		X
Assessed by:										Date:				Version:		
Approved by										Review due date:				Last review date:		
Reference:										Last review by:						

Use the grinder machine for fabrication and cutting work.	Use the Hand operated electric type grinder machine for fabrication cutting and grinding work.	(PH) Personal injury due to use the damage hand tools.		X		2	2	12	**Administrative Control** -All hand tools are in good condition and damage free. -During the lunch and break grinder machine socket are removed permanently from DB.	1	2	2
		(Ph) Injury due to damage and non standard hand power tools.		x		3	2	18	**Engineering control;** All power tools are in good contion and damage free with on /off switch and standard make. -Grinder machiene are with operting handle. -Hand power tools are double insulated body cover otherwise need the double body earthing. **Admin Control**: All hand power tools are inspected as per Hitachi energy inspection checklist before use.	1	2	2
		(PH) Fire due to fire particles during the welding .		X		3	2	18	**Elimination-** All flammable materials are removed from hot work area. -Fire extinguisher are available at work location. -Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone. **Engineering control**:If grinder work is going on at height than provide the cage by GI sheet for controlling the spread the fire particles.	1	2	2
		(Ph) Not wear the proper PPEs		X		2	2	12	**PPE;** During grinder work person are worn the white face shield with attached safety helmet, leather hand gloves, leather body apron. -And if operator will use the metal wheel in grinder machine for jerry work than he can use the eyewear and nose mask.	1	2	2
		(Mech) Unguarded rotating part.		x		3	3	27	**Engineering control;** All rotating parts are covered by safety cage/guard. And guard are proper tigntness. -Ensure that always wheel rpm are more than from machine RPM. Right wheel should be used for job. like cutting wheel only for cutting activity, and grinder wheel only for ginder activity. -Ensure the expiry date of wheel before use. -Operator have specific key for wheel tightness.	1	3	9
Use the cutter machine for ms material cutting work.	Using the cutter machine for small angle channel and long reinforcement etc cutting work.	(PH) Personal injury due to use the damage hand tools.	X	x		2	2	12	**Administrative Control** -All hand tools are in good condition and damage free. -During the lunch and break grinder machine socket are removed permanently from DB.	1	2	2
		(Ph) Injury due to damage and non standard power tools.		X		3	3	27	**Engineering control;** All power tools are in good contion and damage free with on /off switch and standard make. -Hand power tools are double insulated body cover otherwise need the double body earthing. -Cutter machine are kept on levels and compacted platform. **Admin Control**: All power tools are inspected as per Hitachi energy inspection checklist before use. Before cutting the long materials provide the proper packing in both side under materials as per machine level and materails are locked in machine during the cutting. -Loose clothes are not worn during the machine	1	3	9
		(PH) Fire due to fire particles during the welding .		X		2	2	12	**Elimination-** All flammable materials are removed from hot work area. -Fire extinguisher are available at work location. -Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone. **Engineering control**:provide the cage by GI sheet for controlling the spread the fire particles.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply							
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

		(Ph) Not wear the proper PPEs		X		2	2	12	**PPE;** During cutting machine operting ,person are worn the white face shield with attached safety helmet, leather hand gloves, leather body apron.	1	2	2
		(Mech) Unguarded rotating part.		x		3	3	27	**Engineering control:** All rotating parts are covered by safety cage/guard. And guard are proper tigntness. -Ensure that always wheel rpm are more than from machine RPM. Right wheel should be used for job. -Ensure the expiry date of wheel before use. -Operator have specific key for wheel tightness.	1	3	9
Use the hand drill machine and stand drill machine for fabrication work.	Using the hand drill machine or stand drill machine for making the hole in structure and wall, and hand drill machine are used for nut tightning/screw fixing.	(Ph) Injury due to damage and non standard power tools.		X		3	2	18	**Engineering control;** All power tools are in good contion and damage free with on /off switch and standard make. -stand drill machine are with operting handle. -Hand power tools are double insulated body cover otherwise need the double body earthing. **Admin Control**:Stand drill machine are fixing on leveled surface. -All hand power tools are inspected as per Hitachi energy inspection checklist before use.	1	2	2
		(Mech) Unguarded rotating part of stand drill machine.		X		3	3	27	**Engineering control;** All rotating parts are covered by safety cage/guard. And guard are proper tigntness.	1	3	9
		(Ch) Eye injury due to iron particles	X	X		2	2	12	**PPE**: During the drill work use the eyewaer.	1	2	2
		(Ch)Nosie	X			2	2	12	**PPE:** During the drill work use the ear plug or stand drill machine use the ear muff.	1	2	2
		(Ph) Fall the stand drill machine due to uneven platform.		X		2	2	12	**Engineering control:** Stand drill machine is kept on levellled platform.	1	2	2
	Screw fixing and removing by drill machine.	(PH) Eye injury due to slip the screw.		X		1	2	2	**Engineering control:** Work area are barricading and display the warning signage board. **Admin control:** All screw are collected in box. Don't spread at work loction. **PPE:** during the drill work use the eyewear.	1	2	2
	Drill work in Concreting and brick wall.	(Ch)Inhalation problem due to dust.	X			2	2	12	**Engineering control:** ensure the proper ventilation and opening and exhaust fan in working area. **PPE:** Use the nose mask during the drill work.	1	2	2
		(Ph) Eye injury due to concrete particles.		X		2	2	12	**PPE:** Worn the eyewear during the drill work.	1	2	2
Use the magnate drill machine	Using the magnetic drill machine for create the hole in MS structure.	(Ph) Fall the drill machine due to emergency power off.		X		3	3	27	**Engineering control**: Drill machine are hanged and connected through sling with structure. All lifting slings are tested. Height work area is barricaded.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**									Who may be affected by this activity? mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
Use the gas cutting set for cutting work.	first Storage the gas cylinder LPG or oxygen. Max two cylinder each cylinder is 19 kg.	(Ch) Poor storage of Gas cylinder.		X	x		3	3	27	**Engineering control:**'All compressed gas cylinders shall be stored in an upright position and be labeled according to their gas contents -Cylinders shall be secured by a chain, strap, or heavy gauge wire at their midpoint to ensure that they will not be incidentally knocked over. -Storage locations shall be well ventilated and ambient room storage temperatures shall not be allowed to exceed 50ºC (125 ºF approx.). -Compressed gas cylinders shall be stored so that they are protected from the direct effects of weather e.g. sun, frost etc. -Cylinder storage locations shall be distinctly marked with the names of each compressed gas maintained at the location or stored according to legislative requirements. NO SMOKING - FLAMMABLE GAS signs shall be posted at all entrances to locations where flammable gases are stored. - All cylinders in storage shall require valve protection caps at all times except when the cylinder contents are being dispensed. - Storage locations for oxidizing gas (i.e., oxygen) and flammable gas (e.g., acetylene) cylinders shall maintain a minimum distance of 3 meters to separate the oxidizing and flammable gas cylinders	1	3	9
	Handling the gas cylinder from one location to another location	(Ph)Incident due to improper handling		x	X		3	3	27	**Admin control:**Compressed gas cylinders shall only be transported in an upright position and secured against falling. - Compressed gas cylinders shall never be rolled on its side, slid, or dragged from one location to another. - To transport cylinders, only a weight approved trolleys (i.e., hand truck) shall be used to allow the cylinder to be moved in a secured upright position. - Cylinder trolleys to be supplied for transport and manual handling. - The cylinder must be transported on an approved trolley by pushing and not by pulling. - If the trolley shows signs of wear or damage it must be replaced. - When securing the cylinder on the trolley, use the chain or strap that is attached to the trolley to ensure it is firmly secured. -All pressure regulators shall be removed, and valve protection caps shall be installed prior to moving any cylinders. -Cylinders must NEVER be transported long distances with their regulators in place	1	3	9
	Cut the stru using Gas cutting set at a height of 10.5 mtr, Use Scissor Lifter to reach at a height of 10.5 mtr. Use the gas cutting set for fabrication work.	(Ph) leakage of gas			x		3	3	27	**Admin control:** -Close the cylinder valve properly. -Check the leakage through soap water or leakage tester meter before daily use. -After each use of a compressed gas, the cylinder valve shall be fully closed and all gas re maining in the regulator valve shall be slowly purged. The regulator valve shall be removed, the cylinder valve cap shall be installed, and the cylinder tank shall be removed from the work area and returned to its proper storage location.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								
		(PH) Fire due to fire particles during the welding .		X		3	2	18	**Elimination-** All flammable materials are removed from hot work area. - Fire extinguisher are available at work location. - Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone. **Engineering control**:If gas cutting work is going on at height than provide the cage by GI sheet for controlling the spread the fire particles.	1	2	2
		(Ph) Eye injury while welding ,if not wear the proper PPEs.		X		2	2	12	**PPE:-** -Face shield with attached safety helmet, leather body apron, leather hand gloves are used during the cutting work and ensure the helper also wear the googles during the work. - During the sharp structure handling, person are worn the cut level 2 or 3 hand gloves . -After complete the cutting work, during the cleaning or cheaping of cutting edges, person use the eyewear. -if handling some hot object then use the heat resistance hand gloves. .	1	2	2
		(Ph) Non standard cutting set		X		3	3	27	**Engineering & Admin control**:-Compressed gas cylinders shall not be used in areas where the cylinder tank may come in contact with any sparks or flames. - All cylinder connections, hoses, valves, gauges, flexible connections, etc., shall be inspected prior to using the compressed gas cylinder and formal periodic inspections should be per formed following the instruction manual, keeping records of all formal inspections as per Checklist. - All connections shall be tight with no leaks and any damaged and/or deteriorated cylinder, valves, couplings, hoses, etc., shall not be used. Use crimped fittings to ensure good hose connections. - When opening cylinder valves, gas outlets shall always be pointed away from the user and any other facility personnel standing in the immediate usage area. - All cylinder valves shall be opened slowly using only approved wrenches for the cylinder as provided by the supplier. When using a compressed gas cylinder, the operating wrench shall re main on the cylinder valve at all times. - All compressed gas-cylinder valves, couplings, hoses, etc., shall not be lubricated or allowed to come in contact with oil and/or grease. -Torch handles must be purchased with flashback arrestors built-in, or flashback arrestors shall be added if not equipped for cylinders containing fuel gases. -Separate flashback arrestors must be added to the regulators connected to all gas cylinders. -Cylinders of compressed gases shall not be placed in areas where there may be oil and/or grease nor handled with oily and/or greasy hands. - If the contents of a compressed gas cylinder are depleted, the cylinder valve shall be fully closed, and the valve protection cap shall be reinstalled. The cylinder tank shall be appropriately marked with an EMPTY TANK sign and the tank shall be stored in a secured upright position.	1	3	9
		(PH) Poor houskeeping.		X		2	2	12	**Administrative Control:-** Housekeeping should be done before leaving the site.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply							
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							

GI sheet sheet barricade up to 5.40 mt height.	Hard barricading to be done with GI sheet having height of 5.40 mt.	(PH)Cuts or wounds due to contact with rough edges during the handling.		X		2	2	12	**PPE:** -Cut level 3 /class B type Hand gloves are used during handling of GI sheet.	1	2	2
	Barricade to restrict the unauthorized movement in work area.	(Ph) injury to unauthorized person		X		1	2	2	Engineering control- Provide barriacted to avoid unauthorized entry. Display the sign board of Unauthorized not allow. - Wheel stoper should be provided on vehicle. 'Administrative Controls: Communicate the work plan with shop floor employee which will work near area. PPE- hand gloves cut level 2 , safety helmet , safety shoes.	1	2	2
		(PH)Fly the sheet due heavy wind		X		2	2	12	**Admin :** All GI sheet should be tied with rope or some weight materials should be keep on GI sheet.	1	2	2
	Erection of Vertical supports of SHS 60x60 pipe @ 3.50 mt to 4.00 mt C/C and fixing of 4 Nos of horizontal purlin of SHS 50x50mm. Vertical barricading support fixed in floor with anchor fastener. Vacuum machine is used during drilling work to avoid dusting problem in plant.	(PH)Collapse of Barricade due to improper support.		X		2	1	2	**Engineering Control:** -Vertical support to be anchored or grouted with concrete properly. . supprot should be provided as per approved drawing.	1	1	1
		(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and without any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(CH)Inhalation / ingestion of dust	X			2	2	12	**EngineeringControl:** -Use vaccum machine to avoid dusting **PPE:** Cut level 2 hand gloves Eyewear and nose mask are used during the drill work.	1	2	2
	Cutting & welding work is to be done by grinder M/C & welding M/C if required for modification of vertical support.	(PH) Eye injury while welding and cutting.		X		3	3	27	**Administrative Control :** -Only skilled workers are allowed for welding and cutting work. **PPE:** -Face shield with attached helmet is used during welding work and black eyewear is used by helper during the welding work. Leather bodt apron , leather hand gloves must be used during the welding work. during the grinding activity lether body apron, face shiled with attched safety helemt cut level 2 class B hand gloves must to be wear	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
		(PH) Burn due to welding		X		3	3	27	**Administrative Control:** -All flammable materials are removed from the welding work area. -It is ensured that fire extinguisher near hot work. -Only skilled workers are allowed for welding work. **PPE:** -Face shield with attached helmet is used during welding work and black eyewear is used by helper during the welding work. Heat+cut resistant class B hand gloves must to be use for handling the Hot structure.	1	3	9
		(Elec) Welding cable over heating		X		3	3	27	**Engineering Controls:** -It is ensured that all welding connections are through lug and proper size of cable as per current load and welding machine is with double body earthing. -Welding cable is without temporary joint and both ends are with insulated holder & lugs. -Only single and double phase welding machines are used during work. All terminal should be proper cover. **Administrative Control:** -Welding machine is inspected as per HEIL Checklist.	1	3	9
		(Mech) Unguarded Rotating part of grinder.		x		3	3	27	**Engineering Control**: All Rotating part is covered by safety cage/ guard as per manufacturer recommended. -Wheel RPM is higher from machine RPM. Ensure do not use expire wheel check the both things before use and purchage (RPM or expire date). During the replacement of wheel machine should be disconnected permanently from socket. and during the lunch and break time also machine should be disconnected from socket. -Wheel should be proper tightness by standrad key with machine. Ensure the operating handle in grinder machine.	1	3	9
	Erection of sheet will be done with help of A type ladder / MS table with hand rail of minimum height 1.20mtr height or by JLG.	(PH) Fall of person from MS stool due to without handraill		X		2	2	12	**Engineering Controls:** -MS stool is with handrail and ground surface are levelled .	1	2	2
		(Ph) Fall the Stool during handling		X		2	2	12	**Administrative control:** During the handling and shift the ms table from one place to another place take the special precautions and provide the sufficient min two person , don't try to shift by alone workers.	1	2	2
		(Ph) Working on damage or corrosion MS table		X		2	2	12	**Administrative Control:** Check the physicle condition of the table and identified colour code displayed	1	2	2
		(Ph) Fall the person due to not handrail.		X		2	2	12	**Engineeirng controls:** Ensure the handrail around MS stool mid and top rail (1000 mm). And ensure the access one side . -Working platform should be min 600x600 MM. Height should not above one mtr if need more height then use the standard make mobile stair. Provide the chain for locking during the work entry side of ms table.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**								Who may be affected by this activity? mark "X" all that apply						
	mark "X" one	Routine		Non-routine	X	Emergency			Employees	X	Contractors	X	Other (list)		X
Assessed by:									Date:				Version:		
Approved by									Review due date:				Last review date:		
Reference:									Last review by:						

		(Ph) Damaged ladder		X		3	3	27	**Engineeirng controls:** Esnure the hand rail mid and top 500& 1000 mm Height and working platfrom min 600x600 mm. ensure the toe board min 125 mm height also. Ensure the four jack jack. - Esnure the weight capicty of ladder and SWL marked on ladder. **Admin Control :** During the work ensure the jack are placed and wheels are locked. and step also with handrail arrangement. -During the work person don't try for over reaching. **PPE**:use the full body harness and anchored on top railing during the work. -During shift dont available any person on ladder platform. Display the signage board work related and area barricade . -Dont allow the work under height activity in same time.	1	2	2
		(Ph) Fall of ladder due to work without locking		X		3	3	27	**Engineeirng controls:** Ensure the four jack available . - Esnure the weight capicty of ladder and SWL marked on ladder. **Admin Control :** During the work ensure the jack are placed and wheels are locked. Dont allow the work under height activity in same time.	1	2	2
		Separate ABRA to follow for height work.											
	Fixing the GI sheet with self-threading screw by drill machine.	(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified electrician.	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(Ph) Fall the barricading due to air wind velocity.		X		2	2	12	**Admin control:** Provide the sufficient screw surrounding of sheet and ensure the some space between two sheet for air pasing.	1	2	2
		(Ph) sharp corner of sheet.		X		3	2	18	**Engineering control:** Provide the edge protection sheet on corner and as L type and other solution for edge protection. And provide the night visible sticker on sheet. Radium sticker and sign out side of sheet	2	2	12
		(PH)Cut injury during handling of GI sheet		X		2	2	12	**PPE:** -Cut level 3 class B Hand gloves are used during handling of GI sheet.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X	
Assessed by:								Date:				Version:			
Approved by								Review due date:				Last review date:			
Reference:								Last review by:							
	Remove the hard barricading after completing the job by manually. Remove sheet one by one by drill machine and thereafter remove Vertical support.	(Elec)Electric shock due to improper electrical system		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and without any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls:** All power connection are through certified	1	3	9
		(PH) Injury due to use nonstandard power tools.		X		2	2	12	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. **Administrative Controls:** All power tools are inspected as per HEIL Checklist.	1	2	2
		(PH)Cut injury during handling of GI sheet		X		2	2	12	**PPE:** -Cut level 3 Hand gloves are used during handling of GI sheet.	1	2	2
	Cut the anchor bolts by grinder machine.	(PH)Obstacle of anchor bolt and removed materials in passage	X			2	2	12	**Engineering Controls:**Remove anchor bolt immediatly after removingvertical support. -All materails are stocked properly in store area.	1	2	2
		(Elec) Electrical shock and spark due to wrong and loose connection.		X		3	3	27	**Engineering Control:** -Power supply is used through 30 mIA ELCB /RCCB & overhead double insulated cable and with metallic extension board male female weatherproof socket IP-67 and no any joint in cable. -All power cable is overheard min 2 mtr height with insulated hook. -Power Extension and DB are with metallic body and induvial operating switch, electrical rubber mat. - Electrician is checked the all connection tightness and through with lugs and gland. - ELCB is tested every month through ELCB tester. **Administrative Controls**: All power connection are through certified electrician.	1	3	9
		(Elec) Electrical shock due to damage condtion of grinder machine.		X		3	2	18	**EngineeringControl:** -All power tools is in good condition and double body earthing if it is not double insulated. -Grinder machine is with safety cover and operating handle. **Administrative Controls:** All grinder machine are inspected as per HEIL Checklist.	1	2	2
		(Ph) Eye injury while cutting if not wear the proper PPEs.		X		2	2	12	**PPE:-** During the grinder operating face shield with attached safety helmet and, leather body apron , leather hand gloves are used.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity? mark "X" all that apply								
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								
		(Mech) Unguarded Rotating part			X		3	2	18	**Engineering Control**: All Rotating part is covered by safety cage/ guard as per manufacturer recommended. -Wheel RPM is higher from machine RPM. Ensure do not use expire wheel check the both things before use and purchage (RPM or expire date). During the replacement of wheel machine should be disconnected permanently from socket. and during the lunch and break time also machine should be disconnected from socket. -Wheel should be proper tightness by standrad key with machine. Ensure the operating handle in grinder machine	2	2	12
		(PH) Fire due to fire particles during the cutting.			X		2	2	12	**Elimination-** All flammable materials are removed from hot work area. - Fire extinguisher are available at work location. - Covered the flammable materials by fire blanket if cannot remove the some materials from hot work zone.	1	2	2
	After completing the job shift all the material to store.	(PH) poor houskeeping			X		2	1	2	**Administrative Control:-**Proper housekeeping to be done after completion of work.	1	2	2
Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height for gable end closing at core assembly.	Shift the bird net and tarpaulin at work location by hand cart or trolly.	(Ph) Cut injury due to sharp edges during the handling.			X		3	2	18	**Admin Control**:All sharp materials should be kept in separate areas with proper signage. **PPEs**; Use the cut resistance class 02 hand gloves for handling the sharp materials	3	2	18
		(PH)Slip and trip due to poor access.			X		2	2	12	**Administrative Controls:** Materials shifting route to be clearly identified and any obstacle materials to be remove from access area.	1	2	2
		(Ph) Poor illumination / visibility			X		3	2	18	**Engineer control:** sufficient illumination should be available at work place.	2	2	12
	Take the isolation of overhead crane before starting the work.	(Elec.) Chances of electric shock			X		3	3	27	**Administrative Control:-**Inform Hitachi engineer and take LOTO before starting of work to avoid chances of electric shock. Specially need to discount the power supply for Crane bus bar in working area and provide the interlock for crane min two mtr away because hanging load should not hit with barricading.	1	3	9
		(Ph) injury due to exisitng buisness maetrail			X		1	2	2	**Administrative Control:** work should start after remvoing all buisness material from work area**.** Working area machine and electrical points isolation required. Need to permanent disconnection of various types of utility like power, Beam detector, UPS power supply, air and oil plie , network , HVCA duct etc. and take the written clarence from concern dept.	1	2	2
		(Ph) work start without discussing to buisness team					1	2	2	**Administrative Control:** before start the work , discussion should be done with buisness team and concern person to avoid unsafe activity. Communicate the work plan with shop floor employee which will work near area.	1	2	2
	First fix the bird net of (Max. size-30.50mt x 9.25mt & Max Weight-60 kg) at bottom level of truss by tying it with 2.5mm thick nylon rope and 2.0mm thick SS wire rope with truss at both the end with help of JLG.	(PH) Fall the person from bucket due to overload and not proer anchoring			X		3	3	27	**Adminstrative Control:** Only two person is allowed on MEWP together and with under SWL limit. And full body harness must to be anchored on identified anchoring point. And same in Scissor lift person should be work as per given manf guidelines and person will not do the anchor the harness one side for platform balance maintain. During the movement of boom person will sit on bucket after stable of boom bucket person will start the work. Avoid the work under suspended load or height activity as per LSR rule.	1	3	9

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity? mark "X" all that apply							
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

		(PH) Poor condition of nylon rope		X		2	2	12	**Adminstrative Control:** Nylon rope should be in good condition and without any cut**.** Net should be tested and proper tied with structure for taking the load and avoid the material come inside of shop floor	1	3	9
		(Ph) Fall loose materials and hand tools from height.		X		3	3	27	**Engineeirng controls:** All loose materials are kept in bucket /box and after complete the work remove the all materials from bucket. -All hand tools are tied with harness during the work.	1	3	9
	After fixing one piece of bird net other piece will be fixed by tying it with the first piece by 2.5mm thick nylon rope. Bird net from the truss bottom to top of truss will be fixed by tying it with 2.5mm thick nylon rope. Top of net will be tied with structure and bottom will be tied with other bird net which was fixed earlier.	(PH) Poor condition of nylon rope		X		2	2	12	**Adminstrative Control:** Nylon rope should be in good condition and without any cut**.** Net should be tested and proper tied with structure for taking the load and avoid the material come inside of shop floor production area.	1	3	9
	After fixing Bird net, Minimum 3 Nos of horizontal SS wire rope of 2.0mm thick will be fixed with clamp and turn buckle on structure/Purlin at both the ends.	(Meh) failure of wire rope due to improper fixing		X		3	2	18	**Engineering Controls:** -Horizontal wire rope are fixed with structure/purlin through min two d clamp and proper tightness through turn buckles -Wire rope, Turn Buckle and D clamp are tested by third party competent person (10 no form.)	1	2	2
		(PH)Chance of injury due to sharp edges during fixing and tightening of wire		X		3	2	18	**Engineering Controls:**-Ensure proper grip during fixing of wire. keep wire at safe distance.becuse wire should not tangling. **Administrative Controls**: During the fixing provide the some visible indicate on wire so avoid the slip and trip in working area. **PPE:**During the fixing of wire use class B hand gloves.	2	2	12
		(PH)Chance of injury due to escape of wire from clip or clip		X		2	2	12	**Engineering Controls: -** ensure and proper checking of wire fixing. -ensure fixing cilp properly in wall tightly.	1	2	2
	After fixing bird net, Tarpaulin (Max. size-30.50mt x 5.50mt & Max. Weight-45 kg) will be fixed with over bird net by tying it with 2.5mm thick nylon rope at @ 750 mm C/C. In the end, seal the cut outs made for structure member with the adhesive tape.	(PH) Poor condition of nylon rope		X		2	2	12	**Adminstrative Control:** Nylon rope should be in good condition and without any cut	1	3	9
		(PH)Lake of illumination and and suffocation due to cover the work place by Tarpaulin	X	x		3	3	12	**Engineering Controls: -** Check the lux level before start the work if require the provide the sufficient light with opertaing switch and ensure that operating switch must be approachable.Provide the some wall fan and exhaust fan for comfort work environment for workmen. **-Administrative Controls:** Provide the proper break during the work to workmen.Ensure the drinking water availability at workplace	1	3	9
		(Ph)Fire due to hot work and lighting near tarpaulin		X		3	2	12	**Engineering Control:** All lighting should be fix in safe distance from tarpaulin and hot work is not aloowed nwar tarpaulin.	1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**							Who may be affected by this activity?						mark "X" all that apply		
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X		
Assessed by:								Date:				Version:				
Approved by								Review due date:				Last review date:				
Reference:								Last review by:								
		(PH) Cut injuries due to sharp edges of tarpulin			X		2	2	12	**Adminstrative Control:** Cut lvl 2 hand gloves to be used during work.			1	3	9
	After completion of work remove all excess material & do proper housekeeping.	(PH) poor houskeeping			X		2	1	2	**Administrative Control:-**Proper housekeeping to be done after completion of work.			1	2	2

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**					Who may be affected by this activity?	mark "X" all that apply				
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

			Severity				
			Very Minor (1)	**Minor (2)**	**Moderate (3)**	**Major (4)**	**Critical (5)**
Likelihood	Occurs frequently, expected (e.g., daily)	**Almost Certain (5)**	15	30	105	140	175
	Occurs often, common (e.g., weekly)	**Likely (4)**	12	24	84	112	140
	Likely, probable (e.g., annually)	**Possible (3)**	3	18		84	105
	Unlikely, un-common (e.g., once in business)	**Unlikely (2)**	2	12	18	56	70
	Extremely unlikely, rare (e.g., never realized in business)	**Rare (1)**	1	2	9	12	35
Health			Short-term symptoms (illness) or condition which does not result in lost time. Reversible effects.	Illness which requires medical treatment or attention, but still fit for normal duties. Reversible effects.	Illness, rendering them unfit for normal duties (UNABLE TO WORK). Reversible effects but severe in nature.	Debilitating, terminal and/or lasting ill health issues.	Terminal health conditions which could affect multiple people.
Safety			Very minor injury, non-professional first aid only.	Minor injury, first aid provided by trained professional; first aid incident only.	Basic medical treatment (no amputations or broken bones); lost time or restricted workday incident with quick return to work (absence beyond the shift it occurred).	Broken bones, musculoskeletal injury, significant burns; significant absence from work.	Fatality or disabling injuries, e.g., amputations, loss of sight, etc.
Environment			Minimal, short-term (hours) environmental damage, contained within the immediate area.	Minor, short-term (days) environmental damage, contained within the facility boundary.	Short-term (weeks) environmental damage, contained within the site boundary.	Serious, medium-term (months) environmental damage and/or local offsite impact.	Very serious, long-term (years) or permanent environmental damage and/or national/
			Greater than 10 g SF6 emission.	Greater than 0.1 kg SF6 emission.	Greater than 1 kg SF6 emission.	Greater than 42 kg SF6 emission.	Greater than 85 kg SF6 emission.
			Customer complaints.	Single customer leaving.	Some customers leaving.	Several customers leaving.	Blacklisted.
			Costs greater than $100 USD.	Costs greater than $1,000 USD.	Costs greater than $10,000 USD.	Costs greater than $100,000 USD.	Costs greater than $1,000,000 USD.
				Neighbor complaints, one article	National media campaign.	International media.	

High

Medium

Low

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**					Who may be affected by this activity?	mark "X" all that apply				
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

ACTIVITY BASED RISK ASSESSMENT ACKNOWLEDGEMENT

Employee Acknowledgement

Name of Member	Name of Company	Date of training	Sign of Member	Name of Member	Name of Company	Date of training	Sign of Member

Training given by-

Duration -

Activity Based Risk Assessment

Activity:	**Site mobilization , cleaning, tree cutting , barricading, Manual & Mechanical loading & unloading and shifting(Portable cabin 2 no's), Use the electrical operated hand tools for fabrication, GI Sheet barricade up to 5.40 mt, Fixing of Bird Net & Tarpaulin from 5.00 mt to 26.0 mt height activity at Hitachi energy Factory Maneja**						Who may be affected by this activity?	mark "X" all that apply					
	mark "X" one	Routine		Non-routine	X	Emergency		Employees	X	Contractors	X	Other (list)		X
Assessed by:								Date:				Version:		
Approved by								Review due date:				Last review date:		
Reference:								Last review by:						

APPENDIX 1

Re-assess risks to show how proposed actions will be effective in reducing the risk. Also consider whether any new hazards will be introduced. →	Proposed actions/ risk reduction measures (hazard being reduced)	Expected risk after completion of actions			Action Owner		Actual completion date	I confirm that the proposed actions have been completed and that the expected risk reduction has been achieved		
		Likelihood	Severity	Risk Level				Name	Signature	Date
	(Example) *Ensure suitable firefighting equipment (e.g., extinguisher) is made available (Fire if there is an explosion).*	*1*	*2*	2						
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									

This section should only be used to insert actions which have been identified (but not yet completed) which will reduce risks and improve the process.

Rev. No.	Rev. Date	Revision details
A		
B		
C		
D		
E		
F		
G		
H		