DISMANTLING TOWER CRANE RISK ASSESSMENT

Project:		Document Name / No:	Revision	Page 1 of 6

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation			Additional Controls	Residual Risk		
					P	S	R		P	S	R
1.	**Preparation work** ● Workers ascend to the working area on top of the crane. ● Written instruction / any popping to be signed off by R.E before works commence.	● Working at height	● Workers slip and fall from height ● Lightning strike	● Riggers must have a safety harness during climbing, working on top or while climbing down. ● To immediate stop doing work during/possibility of heavy rain, lightning strike or strong wind.				● Briefing all workers on the risk and proper work method before carrying out the task ● To have a toolbox talk before starting work every morning. ● Check all equipment and tools before starting and report for any malfunction or problem immediately			
2.	● Self-jacking to lower down tower mast. ● Un-reeving of hoisting wire rope ● Loosen the hoisting wire rope and u-clip.	● Lifting gear failure. ● Unsafe work practice. ● Falling object. ● Height suspended load ● Hand/finger crush in between ● Slip and fall ● Trip and fall ● Ergonomics	● Damage to existing building structure/machinery. ● Serious injury or fatality. ● Wire rope detach and swing through the air ● Falling object ● Workers fall from height ● Crush-in between counterweight ● Hand/ finger/ eye injury	● The certified crane operator, lifting supervisor and rigger/signalman. ● Competent person to ensure all properly secure before lower down work been done. ● To follow recommended SWL from the manufacturer for wire rope and Shackles that going to be used. ● Visual Inspected for any kinks, wear and broken wire. ● Proper PPE (safety helmet, safety boots, safety harness, hand glove)				● To conduct safety briefing to workers before starting work. ● Working/Operational ground area must be barricaded and warning sign to ensure no other activity has been carried out. ● Wind the wire rope properly and place on the platform and tighten it down. ● Provide signalman to communicate with operator and riggers during work been done.			
3.	**Dismantling of Counterweights (5 no's) by mobile crane** ● Setting up - mobile crane (25 tons) ● Secure the counterweights with a sling ● Removed the lock pins and lift out the bracket ● Slowly hoist down to the ground using Mobile Crane (25 tons)	● Crane Overturned ● Overhead Electrical ● Mechanical Failure ● Steel wire rope snapped ● Working at height ● Falling object ● Slip/ trip and fall ● Working at height ● Falling object ● Slip/ trip and fall ● Hand/ finger crush in between ● Height/ suspended load ● Falling object ● Mechanical failure	● Crush in between ● Electrical shock ● Hit by flying object ● Crush in between ● Falling objects, workers fall from height ● falling object ● Crush in between ● Falling object ● Workers fall from height ● Wire rope detach and swing through the air ● Falling objects, workers fall from height ● Falling object, crush in between counterweight ● Hand/ finger/ eye injury.	● Ensure a PMA is valid, the operator is competent ● Proper PPE (safety helmet, safety boots, safety harness, hand glove) ● Ensure mobile crane rest on solid and firm ground and use steel plate and solid timber planks as an additional sleeper. ● Use proper PPE, tag line must be used at all time ● Barricade area below tower crane hoisting spot ● Use proper PPE ● Use a suitable container to store small components and tools. ● Ensure safety harness is in used all the times ● Barricade area below tower crane hoisting spot. ● To check and ensure the mobile crane in a proper setup and suitable working radius ● Use tagline ● Barricade area below tower crane hoisting spot				● Check all the mobile crane electrical system, mechanical system, safety device and indicators are in order ● Check maximum loading calculation and maximum safe working radius and confirm with mobile crane design load chart for safe operation. ● Provide signalman ● Tools like hammers must be fitted with good quality wooden handles. ● All tools to be tied off/tools lanyard. ● No tools or objects shall be placed in open space ● Provide signalman			
4.	**Dismantling of boom section.** ● Secure, tension and remove the relevant pins and spring clamps from the boom section mounting ● Lift using a mobile crane (25 tons) and disconnect from the slewing table, joint and slowly hoist down to ground	● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall ● Height/ falling object ● Hand/ finger crush in between ● Ergonomic ● Slip/ trip and fall	● Falling object ● Workers fall from height, falling object ● Crush in between the main jib ● Hand/ finger/ eye injury ● The jib section may hit the overhead structure or service cable ● Wire rope detach and swing through the air ● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury	● Ensure all unauthorized workers are clear from the affected work area. ● Ensure all unauthorized workers are clear from the affected work area. ● To secure the JIB properly and lift slowly to confirm the C.G before hoisting down slowly to ground level				● Use tagline to assist in hoisting			

DISMANTLING TOWER CRANE RISK ASSESSMENT

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation			Additional Controls	Residual Risk		
					P	S	R		P	S	R
			● The jib section may hit the overhead structure or service cable								
5.	**Dismantling of counterweights by mobile crane (2nos)** ● Setting up a mobile crane (25 tons / 25 tons) ● Secure the counterweight with a sling ● Removed the lock pin and lift out the bracket ● Slowly hoist down to the ground using a mobile crane (25 tons)	● Crane overturned ● Overhead electrical ● Mechanical failure steel wire rope snapped ● Height/ suspended load ● Falling object ● Mechanical failure ● Height ● Falling object ● Slip/trip and fall ● Height ● Falling object ● Slip/trip and fall ● Hand/finger crush in between	● Crush in between ● Electrical shock ● Hit by a flying object ● Crush in between ● Falling objects, workers fall from height ● Falling object ● Crush in between ● Falling object ● Workers fall from height ● Wire rope detach and swing through the air ● Falling objects, workers fall from height ● Falling object, crush in between counterweight ● Hand/ finger/ eye injury	● Ensure a PMA is valid, the operator is competent and fit for inspection ● Ensure mobile crane rest on solid and firm ground and use steel plate and solid timber planks as an additional sleeper. ● Check all the mobile crane electrical systems, mechanical systems, safety devices and indicators are in order. ● Check maximum loading calculation and maximum safe working radius and confirm with mobile crane design load chart for safe operation. ● Use proper PPE, tag line must be used at all time ● Barricade area below tower crane hoisting spot provide signalman ● Proper PPE (safety helmet, safety boots, safety harness, hand glove) ● Use a suitable container to store small components and tools ● Ensure safety harness is in used all the time barricade area below tower crane hoisting spot provide signalman ● To check and ensure the mobile crane is in a proper setup and suitable working radius. ● use tagline ● Barricade area below tower crane hoisting spot ● Provide signalman				● Proper PPE (safety helmet, safety boots, safety harness, hand glove ● Tools like hammers must be fitted with good quality wooden handle ● No tools or objects shall be placed in open space. ● Tools to be secure / tie-off avoid falling to the ground.			
6.	**Dismantling of the top tower** ● Secure, tension it and remove the relevant pins and spring clamp from the slewing table joint ● Using a mobile crane slowly hoist down the tower top to the ground (25 tons)	● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury ● The jib section may hit the overhead structure or service cable ● Wire rope detach and swing through the air ● Falling object ● Workers fall from height ● Crush in between hand/ finger/ eye injury	● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury ● The jib section may hit the overhead structure or service cable ● Wire rope detach and swing through the air ● Falling object ● Workers fall from height ● Rush in between hand/ finger/ eye injury	● To check and ensure the mobile crane in a proper setup and suitable working radius ● To ensure all unauthorized workers are clear from the affected work area when hoisting of the jib is in progress ● To ensure all unauthorized workers are clear from the affected work area To ensure there is proper clearance and no interference by another crane while dismantling and hoisting of A frame is in progress ● To secure the JIB properly and lift slowly to confirm the C.G before hoisting down slowly to ground level.				● Tools like hammers must be fitted with good quality wooden handle ● No tools or objects shall be placed in open space			
7.	**Termination of power supply** ● Terminate power supply	● To make sure a qualified	● Electrical shocks ● Falling object	● To make sure qualified ● Electrician to disconnect				● Competent person to ensure all power in a proper earthing.			

DISMANTLING TOWER CRANE RISK ASSESSMENT

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation P	Risk Evaluation S	Risk Evaluation R	Additional Controls	Residual Risk P	Residual Risk S	Residual Risk R
	● Disconnect the cable connection	electrician disconnects the power supply before carrying out this job ● Proper PPE (safety helmet, hand glove) ● To make sure qualified electrician to disconnect the power supply before carrying out this job ● Proper PPE (safety helmet, safety boots, safety harness, hand glove)	● Workers fall from height ● Electrical shock ● Falling object/ ● Workers fall from height	● Power supply before carrying out this job ● Proper PPE (safety helmet, ● Hand glove) to make sure qualified electrician disconnect ● Power supply before carrying out this job ● Proper PPE (safety helmet, safety boots, safety harness, hand glove)				● Competent person to ensure all power in a proper earthing.			
8.	**Dismantling of hoisting winch** ● Using a mobile crane slowly hoist down the tower top to the ground (25 tons)	**Dismantling of hoisting winch** ● Using a mobile crane ● slowly hoist down the tower top to the ground (25 tons)	● Wire rope detach and swing through the air ● Falling object ● Rush in between hand/ finger/ eye injury ● Workers fall from height	● To ensure it is proper clearance and no interference by another crane while dismantling and hoisting of A frame is in progress ● To secure the JIB properly and lift slowly to confirm the C.G before hoisting down slowly to ground level				● To ensure all unauthorized workers are clear from the affected work area			
9.	**Dismantling of counter jib** ● Secure, tension and remove the relevant pin and spring clamps from the counter jib section mounting ● Lift using a mobile crane (2nos, 25 tons / 25 tons) and disconnect from the slewing table, joint and slowly hoist down to the ground	● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall ● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall	● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury ● The jib section may hit the overhead structure or service cable ● Wire rope detach and swing through the air- workers ● Fall from height ● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury ● The jib section may hit the overhead structure or service cable	● To ensure all unauthorized workers are clear from the affected work area ● To ensure all unauthorized workers are clear from the affected work area ● To secure the JIB properly and lift slowly to confirm the C.G before hoisting down slowly to ground level ● Use tagline to assist in hoisting				● To ensure all unauthorized workers are clear from the affected work area ● Proper PPE (safety helmet, safety boots, safety harness, hand glove ● Tools like hammers must be fitted with good			
10.	**Dismantling of the operator cabin** ● Secure and use mobile crane lift out of the slewing table joint (25 tons) ● Using a mobile crane slowly hoist the operator cabin down to ground level (25 tons	● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall ● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall	● Wire rope detach and swing through the air- workers ● Fall from height ● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury ● Wire rope detach and swing through the air- workers ● Fall from height ● Falling object ● Workers fall from height ● Crush in between the main jib ● Hand/ finger/ eye injury	● To ensure small hand tools are put in the proper container or sling bag ● Use tagline to assist in hoisting ● Use PPE (safety helmet, boot, hand glove, safety harness) ● To check and ensure the mobile crane in a proper setup and suitable working radius ● To secure the JIB properly and lift it slowly to confirm the C.G before hoisting it down slowly to ground level				● Stop immediately if there is strong wind/ possibility of bad weather ● To ensure all unauthorized workers are clear from the affected work area			

DISMANTLING TOWER CRANE RISK ASSESSMENT

Project:		Document Name / No:	Revision	Page 4 of 6

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation			Additional Controls	Residual Risk		
					P	S	R		P	S	R
11.	**Dismantling of slewing table assembly** ● Secured with slings, tension it and remove the 8 no's of bolts and nuts from the mast joint ● Using a mobile crane slowly lift/disengaged and hoist down to the ground (25 tons)	● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall ● Height/ falling object ● Suspended load ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall	● Workers hit by a falling object placed in open space and defective tools injury to site workers ● Falling object ● Workers slip and fall	● To ensure small items are carried in waist pouch and hand tools such as hammer must be fitted with good quality wooden handle. No tools or objects shall be placed in open space ● To check on lifting gears to be secured properly and in the right static hooking point. ● To check and ensure mobile crane in proper setup and suitable working radius ● To confirm the physical condition of CG is in good order				● No tools or objects shall be placed in open spaces ● To clear any loose object from slewing table ● Use a container to place small components ● Use tagline to control the hoisting			
12.	**Dismantling of 6 no's mast section by hoisting operation** ● Remove the relevant pins ● Use a mobile crane slowly hoist down to the ground (25 tons	● Height/ falling object ● Hand/ finger crush in between ● Ergonomics ● Slip/ trip and fall ● Height/ suspended load	● Falling object ● Workers slip and fall ● During hoisting down, the mast section might hit workers. ● Wire rope detach and swing through the air	● To use the container for small component storage ● To fully barricade the area below the tower crane ● To check and ensure the mobile crane in a proper setup and suitable working radius ● To monitor closely while hoisting down the mass section				● Signalman to blow whistles and cleared all unauthorised workers in the affected work area.			
13.	● Dismantle and remove collars and I-beam ● Use a mobile crane slowly hoist down to ground level (25 tons)	● Height/ suspended load	● During hoisting down, the mast section might hit workers ● Wire rope detach and swing through the air	● To check and ensure the mobile crane in a proper setup and suitable working radius ● To monitor closely while hoisting down the mast section				● To clear and housekeeping at the loading area ● Put barricade/ warning sign ● Use a whistle to warn nearby workers/ public ● To provide flagman to control and manage traffic. ● Signalman to blow whistles and cleared all unauthorised work in the affected work area.			
14.	**Loading into a 40-footer lorry** ● Lorry moves in and out and parks within the designated loading area ● Put timber wedge and using a mobile crane (25 tons), hoist the component and transfer safely into a lorry	● Moving vehicle ● Crush in between the suspended load	● Workers hit by a lorry during reverse movement ● Falling object, finger injury ● Mobile crane hoisting failure	● To wear PPE (safety helmet, boot, hand glove) ● To stand by a flagman to guide the lorry ● To wear PPE (safety helmet, boot, hand glove) ● To ensure tagline is used during hoisting ● The area within the mobile crane hoisting radius is to be fully barricaded ● To provide a signalman to assist in hoisting				● To clear and housekeeping at the loading area ● Put barricade/ warning sign ● Use a whistle to warn nearby workers/ public ● To provide flagman to control and ● manage traffic.			

* C.G – Center of Gravity

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation			Additional Controls	Residual Risk		
					P	S	R		P	S	R

OSH Risk Matrix

Probability	Consequence				
	1-Negligible	2-Marginal	3-Critical	4-Severe	5-Catastrophic
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20
Frequent/Almost Certain (5)	5	10	15	20	25
15 - 25	Extreme Risk	Activity or Industry Should Not Proceed in Current Form			
8 - 12	High Risk	Activity or Industry should be modified to include remedial planning and action and be subject to a detailed OSH Assessment			
4 - 6	Moderate Risk	Activity or industry can operate subject to management & Modification			
1 - 3	Low Risk	No Action Required Unless Escalation of Risk is Possible			

Probability is the likelihood:	
Frequent/Almost Certain (5)	An event will happen without a doubt
Often (4)	Will occur several times
Likely (3)	It will occur sometime
Possible (2)	Unlikely but possible to occur.
Rare (1)	So unlikely, it can be assumed occurrence may not be experienced.

No	Activity	Hazards	Risk / Consequence	Existing Controls	Risk Evaluation			Additional Controls	Residual Risk		
					P	S	R		P	S	R

Consequences	People	Assets	Environment	Reputation
5-Catastrophic	Multiple Fatalities	Extensive damage	Extensive Effect	International impact
4-Severe	Single fatality or Permanent total disability	Severe damage	Severe Effect	National impact
3-Critical	Major injury or health effects (long term or permanent partial disability)	Major damage	Major Effect	Major impact
2-Marginal	Minor injury or health effects leading to LTI/RWC/MTC	Minor effect	Minor Effect	Minor impact
1-Negligible	Single injury or health effects, requiring first aid	Slight effect	Slight Effect	Slight impact

	NAME & DESIGNATION	DATE	SIGNATURES	NEXT REVIEW DATE
ASSESSED BY:				
REVIEWED BY:				