
BPP VINH CHAU WIND POWER LIMITED LIABILITY COMPANY (BPPVC)

BPP VINH CHAU WIND FARM PROJECT – WIND POWER PLANT No.3

JOB SAFETY ANALYSIS

PILING WORKS

For Approval

REV.	DATE	ORIGINATOR	REVIEWED	APPROVED	DESCRIPTION
A	21-7-2020	Nguyen Gia Thanh	Bai Xuefei	Wang Zhaofu	For Approval
B	1-9-2020	Huynh Van Nhung	Bai Xuefei	Wang Zhaofu	For Approval

REVISION RECORD

JOB SAFETY ANALYSIS (JSA)

Project: BPP VINH CHAU WIND FARM PROJECT –WIND POWER PLANT No.3			Date: 21- Sept - 2020	
Contractor: Power China International Group Limited			JSA No: VC1-Q-G-12-001	
Job Location: Contrution work of substation			# of workers: 50	
Job Details: <div style="text-align: center; color: red; font-weight: bold; padding: 10px;">Piling works</div>			Document reference: Method Statement No. VC1-M-G-01-002 HSE Plan : VC1-Q-G-01-004	
Permit Required: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> OTHERS:				
<input checked="" type="checkbox"/> Excavation	<input type="checkbox"/> Electrical Work/ Loto	<input type="checkbox"/> Grating Removal Work	<input type="checkbox"/> Diving Work	
<input type="checkbox"/> Night Work / Holiday Work	<input type="checkbox"/> Confined Space	<input type="checkbox"/> Road Closure	<input type="checkbox"/> Radiography Works	
<input type="checkbox"/> Hot Work	<input type="checkbox"/> Crane Operating	<input type="checkbox"/> Work Over Water	<input type="checkbox"/> Others:	
PPE Required: <input checked="" type="checkbox"/> Head <input type="checkbox"/> Ear <input checked="" type="checkbox"/> Eye <input type="checkbox"/> Pulmonary <input type="checkbox"/> Face <input checked="" type="checkbox"/> Foot <input type="checkbox"/> Leg <input type="checkbox"/> Whole Body <input checked="" type="checkbox"/> Others: Medical Mask				
NAME	POSITION	COMPANY	SIGNATURE	DATE
Tran Hau Hai	SE	PCI		
Nguyen Gia Thanh/ Huynh Van Nhung	HSE	PCI		

STEP NO.	JOB STEP	HAZARD	CONTROL MEASURES	ACTION BY
1	Gathering equipment, machines and materials to the site	1.1 - Damaged truck: Petrol, fire an explosion. Truck crashing temporary works, affect people working unicorn near	<p>1.1.1 Check that the valid vehicle registration certificate, vehicle inspection certificate (for a crane truck) driver's license.</p> <p>1.1.2 Check the operating certificates of the crane drivers.</p> <p>1.1.3 Arrange materials and equipment neatly, convenient when cranes and erection.</p> <p>1.1.4 Do not stand in the cabin or trunk while the vehicle is in operation.</p> <p>1.1.5 The speed of the vehicle on the construction site must be slow, not exceeding 10km / h. Motor vehicles running in the construction site according to the prescribed route and direction guide.</p>	Civil engineer/ site manager/ safety in-charge
		1.2 Materials in the gathering process site warping, distortion, broken broken	<p>1.2.1 Avoid entering areas that are not planned for motor vehicles.</p> <p>1.2.2 Crane operator only manipulates the crane within sight, in close coordination, with spare crane to avoid collision.</p>	
		1.3 Practice stacked pile too and causes a drop to fall outside the construction area	<p>1.3.1 Anchor, hook materials firmly, be careful not to slip, vibrate materials whe cranes.</p> <p>1.3.2 There are measures to arrange anti-rolling for piles on the pile.</p> <p>1.3.3 Strain warning ropes and display signs to restrain workers from traveling to the gathering area pile.</p>	
2	Checking workers, equipment,	2.1 Untrained workers practice safety.	<p>2.1.1 Workers entering the construction area have all legal documents as required concentration.</p> <p>2.1. Workers entering the construction area have</p>	Civil engineer/ site manager/ safety in-charge

	machines to the site.		<p>enough valid medical examination certificates professionally trained, experienced in working</p> <p>with cranes.</p> <p>2.1.3 Workers entering the construction area have enough valid medical examination certificates. professionally trained, experienced in working with cranes.</p> <p>2.1.4 Basic safety training for workers, equipped with appropriate labor insurance: caps Hard, PPE shoes, full body harness, gloves. Workers are strictly prohibited the smell of alcohol</p>	Civil engineer/ site manager/ safety in-charge
		<p>2.2 Equipment, machinery, materials, crane too old, risk of breaking broken during construction</p>	<p>2.2.1 Check inspection paper, crane insurance, cable certificate, chain, hook, ma ní, ... to determine the load capacity, the way of hooking the wire ... is consistent with the properties Work.</p> <p>2.2.2 Check the operator's certificate of operation, the safety certificate of the operators Crane.</p> <p>2.2.3 Check the quality of the mechanical press gantry, the hydraulic cylinders, the structural parts of the truss, welds, load quality, anti-dumping anchors (if any).</p>	
		<p>2.3 Leakage of electrical equipment and power source from the pile press</p>	<p>3.1.1 Check electrical equipment condition, check insulation and stamp before used at site.</p>	
3		<p>3.1 Falling materials, collision in equipment erection process, crane. Falling high, injured in too builder</p>	<p>3.1.1 Put up warning lines, put danger boards, restrict people from walking in the are erection area</p> <p>3.1.2 Tools and equipment (pliers, wrench, ...),</p>	Civil engineer/ site

			position the pile in the pressing cage by wire wind	
		<p>4.4 The process of lifting and lowering public piles personnel are stuck hands and feet in the cable cranes, equipment, moving unde Zones crane field, hit by pile when Standing in a position that is out of sight ...</p>	<p>4.4.1 Check hooks, cables, pulleys, electrica switches and automatic equipment power off ... before lifting the crane</p> <p>4.4.2 Do not lift more than 1 pile at a time, do not crane to lower the pile when the cable tie is less than 2 points.</p> <p>4.4.3 Absolutely do not raise or lower the pile when there are people or vehicles below the area crane, do not lift the pile to cross people, lose sight or change direction Lift unless to avoid an accident.</p> <p>4.4.4 Absolutely do not raise or lower the pile when there are people or vehicles below the area crane, do not lift the pile to cross people, lose sight or change direction Lift unless to avoid an accident.</p> <p>4.4.5 When hooking cables to the pile is complete, the worker must leave the lifting position and regulate pile direction by wind wire, the process of hooking the cable structure equipped with gloves to avoid scratching.</p> <p>4.4.6 Crane cables must be inspected and checked regularly first and after work.</p>	
5	Pile welding	<p>5.1 Workers in the welding process not fully equipped with facilities Personal protection: solder mask, cover welding arm, long-sleeved protective clothing ... welding slag on the above parts</p>	<p>5.1.1 hot work permit activiter is required to be located in the welding work site</p> <p>5.1.2 Full PPE: gloves, solder mask, pants protective clothing. Always place the fire extinguisher at the welding / cutting position.</p>	

		<p>the body causes burns, restraints on the organs heat generation in the process operation of the welding machine causes burns.</p>	<p>5.1.3 Shield the cutting / blasting area to prevent sparks from splashing around. Welding machines and electrical equipment must be checked by electrician before construction.</p> <p>5.1.4 Electrical equipment, power cord during construction must ensure no insulation open or touch phenomenon.</p>	<p>Civil engineer/ site manager/ safety in-charge</p>
<p>5.2 During the welding process, the solder slag shoots out the surrounding equipment, causing damage to machinery, short circuit.</p>	<p>5.2.1 Welding and auxiliary workers must wear glasses or face and eye protection from ultraviolet or infrared rays generated from the welding arc.</p> <p>5.2.2 Welding workers should wear gloves long enough to protect their hands from the effects heat, sparks, molten metal and radiation. Leather is the insulation material Good for making gloves.</p> <p>5.2.3 Electrical wiring of welding machine must be done by electrician. Each welding machine must powered from a separate circuit breaker. It is forbidden to let the wire touch iron and steel,metal structure of works.</p> <p>5.2.4 When electric welding is in place where there is a risk of fire and explosion, safety regulations must be observed. Fire protection.</p> <p>5.2.5 When it rains, construction must stop. Want to re-construction must ensure all The equipment has been tested for safety by electricians.</p>	<p>Civil engineer/ site manager/ safety in-charge</p>		
	<p>5.3.1 Each machine must be insulated with a separate breaker. Wire The machine must be a wire with 2 insulating sheaths. Store where the machine is located</p>			

		5.3 Electric shock during pile cutting construction due to cutting equipment, power cord being electrified, power cord open, power cord wrapped on the blade ...	Dry, clean after use. 5.3.2 Cut off the source when moving from place to place as well as in repaired or operated incorrectly. 5.3.3 Do not use the machine in an overload condition.	
6	Cut the top of the pile	6.1 Workers are not equipped with personal protective equipment: glasses, long-sleeved protective clothing, gloves, masks ... in the process of cutting the pile, the concrete pile is shot at the person causing software friction, causing damaged. eye damage, difficulty breathing due to dust.	6.1.1 Fully equipped with personal protective equipment during the pile head cutting process: glasses, long-sleeved protective clothing, gloves, masks .. 6.1.2 Only persons trained in occupational safety techniques may use the machine. 6.1.3 Check as well as ensure limited standards of power tools Take hands before handing them over to workers. 6.1.4 Workers must adhere to the instructions for use, Store portable electrical equipment away from humid places. 6.1.5 Work with strong noise or vibration should be equipped Personal protective equipment: Glasses, earplugs...	Civil engineer/ site manager/ safety in-charge
		6.2 electric shock during the pile cutting construction due to cutting equipment, power cord being electrified, power cord being exposed, power cord being wound on the blade ...	6.2.1 Each machine must be insulated with a separate breaker. Wire The machine must be a wire with 2 insulating sheaths. Store where the machine is located Dry, clean after use. 6.2.2 Cut off the power supply when moving from place to place as well as during repair, or the machine is not working properly. 6.2.3 Do not use the machine in an overload condition.	

		6.3 Fire or explosion due to electric shock or heat source.	6.3.1 Isolate all flammable materials and equipment from the pile head cutting area	
7	Lower the load and move the rig	7.1 Load that is dumped during crane due to improper loading, unsatisfactory load is still loaded onto the press rig.	<p>7.1.1 Only persons who have been trained in occupational safety techniques experience working with newly authorized cranes.</p> <p>7.1.2 Full PPE.</p> <p>7.1.3 Plug in warning signs, place danger signs, restrict people from walking inside construction area.</p> <p>7.1.4 Check the quality of the load and the correct loading diagram according to design and measurement</p> <p>7.1.5 Use wind wire to navigate, avoid collision during crane lift the body and cage.</p> <p>7.1.6 The crane operator has a sweeping view of the entire crane construction area.</p>	Civil engineer/ site manager/ safety in-charge
		7.2 Workers in the process of hooking cables to load are hit by the load crane and equipment.	<p>7.2.1 Do not crane multiple loads at once, remember to check the load before carrying out hoisting</p> <p>7.2.2 The loading position must be solid, without any machinery or equipment activities below</p>	Civil engineer/ site manager/ safety in-charge

JOB HAZARD ANALYSIS ATTENDANT SHEET

Project name:	BPP VINH CHAU WIND FARM PROJECT –WIND POWER PLANT No.3				
Company:					
Date:					
No	Full name	Signature	No	Full name	Signature

EVALUATION RISK AND ADEQUACY OF CURRENT CONTROL

Probability (Likelihood) categories

5.	Almost certain	Absence of any management controls. If condition remain unchanged there is a most a 100% certainly that an accident / incident will happen
4.	High	Serious failure in management controls. The effect of human behavior or other factors could cause an accident/ incident, but it is unlikely without this additional factor
3.	Medium	Insufficient or sub-standard controls in place. Loss is unlikely during normal operation; however, it may occur in emergencies or non-routine conditions
2.	Low	The situation is generally well managed; however, occasional lapses could occur. This also applies to situations where people are required to behave safely in order to protect themselves but are well trained.
1.	Improbable	Loss, accident/ incident or illness could only occur under expect conditions. The situation is well managed and all reasonable precautions have been taken

Severity (consequence) categories

5.	Major	Causing death to one or more people. Loss or damage is such that it could cause serious business disruption.
----	-------	--

4.	High	Causing permanent disability
3.	Medium	Causing temporary disability
2.	Low	Causing significant injuries
1.	Minor	Causing minor injuries (scratch, cuts). No lost time likely other than for first aid treatment, or repair of superficial damage to interior decoration

* Risk rating = Probability (Likelihood) (2) x Severity (Consequence) (3) = 6 (good to work)

		Probability (Likelihood)				
		Certain	probable	Possible	Remote	Improbable
Severity (consequence)		5	4	3	2	1
Fatal	5	25	20	15	10	5
Major	4	20	16	12	8	4
Lost time	3	15	12	9	6	3
Minor	2	10	8	6	4	2
Negligible	1	5	4	3	2	1
Risk rating low	1 to 9	Green				
Risk rating medium	9 to 15	Yellow				
Risk rating high	15 to 25	Red				