

Format No: ER 5/10- F2, JOB SAFETY ANALYSIS (JSA), IB THERMAL POWER STATION, OPGC							
Serial No.	Department	Equipment	Location	Job description:			
	Main Plant Civil	Warehouse	Main Plant	Fencing of Warehouse Area			
JSA performed by:	Signature	Reviewed & Approved by	Signature	Date of Issue	Date of revision		Revision No-
HAZARD TEXT/TYPE (For reference to identify the Hazard type)							
PHYSICAL HAZARDS	PHYSICAL HAZARDS	PHYSICAL HAZARDS	ELECTRICAL HAZARDS	CHEMICAL/ GAS HAZARDS	EXCAVATION		OTHERS
Noise	Fall from height	Force (Push/Pull)	Shock/ Electrocution	Flammable/ Explosive substances	Collapse/Sliding		Fire
Radiation	Fall (Slip/Trip)	Caught in/on or between	Static electricity	Inhalation of toxic fumes	Underground live cable damage		Heavy Wind/Rain
Confined space	Fall down/below	Struck by/against	Arcflash/ blast	Ingestion/Absorption	ERGONOMICS		Dust exposure
Exposure to pressurised Steam/Air	Fall of Objects from height	Extreme weather (Hot/Cold)	BIOLOGICAL HAZARDS	Body/Eye Contact	Poor Posture		Oil spill
Contact with Hot surface	Contact with moving parts	Poor illumination	Snake/Insect bite/Virus infection	Spillage	Repeatative motion		Human factor
PPEs to be used	Safety shoes, hand gloves ,safety helmet, Nose mask, Ear plug/muff, Safety goggles, reflective vest, etc.						
Tools required	Hoe, pick axe, spade, digging bar, measuring box, head pan, masonry trowel, circular saw, float, ladder, line and pins, measuring box, measuring tape, plumb bob, sand screen, spade, spirit level, tile cutter, wheel barrow, hand saw,						
Important Note- While deciding hazard control measures, consider hierarchy of hazard control steps in order of preference.							
SEQUENCE OF BASIC STEPS	SAFETY, HEALTH & ENVIROMENT HAZARDS		SAFE JOB STEPS / HAZARD CONTROL MEASURES				Are control Measures adequate to mitigate the risk (Yes/No)
			Elimination/ Substitution	Engineering	Administrative	PPE	
Excavation work	Electrocution/Shock from underground/burried cables				Ensure the proper isolation and put local LOTO on the RCCB/Main switch. Ensure zero voltage before starting the job. Use insulation mat while doing	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Body injury (Slip/trip)				Have a 360 degree vision and be alert about the area of work. Use proper and healthy tools.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Body eye conact/ hand/leg injury while digging/manual excavation				Engage inline experienced work person, Use healthy and tested Tools.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Poor Posture				Take Rest in between the job. Do not overstretch your body. Keep in mind about your body limits.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Collapse/sliding of soil				Keep the excavated soil at a distance of 1 mtr from the excavated pit/trench. Barricade the area of work.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Dust/Ash/fumes				Keep dust/fume mask with you. Use wherever needed.Check, whether the filters of the mask are clean before using. Use clean masks.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Fall of person inside excavated pit/trench				Barricade the working area with hard barrication. Use caution tapes and barriers wherever required.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes

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		Elimination/ Substitution	Engineering	Administrative	PPE	
Cement Concrete work	Body injury (Slip/trip)			Have a 360 degree vision and be alert about the area of work. Use proper and healthy tools.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff, gum boots.	Yes
	Body eye conact/ hand injury			Engage inline experienced work person, Use healthy and tested Tools. Use rubber hand gloves to avoid direct contact with cement.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff, gum boots.	Yes
	Poor Posture			Take Rest in between the job. Do not overstretch your body. Keep in mind about your body limits.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff, gum boots.	Yes
Dismantling, Cutting, Fabrication & Erection work	Electrocution			Ensure the insulation of grinding and steel cutting machine and its cable. Ensure that the power source is from a 30mA sensitive RCCB.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Inhalation of toxic fumes			Use good quality nose mask.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
				Use good quality ear plugs/muffs. Take rest in between the job. Do not expose yourself to continuous noise.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Body injury (Slip/trip)			Have a 360 degree vision and be alert about the area of work. Use proper and healthy tools.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Body eye conact/ hand injury			Engage inline experienced work person, Use healthy and tested Tools.Use safety goggles to avoid any foreign material to go inside your eye.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Falling of Object from height			Proper supervision to be done, restrict unauthorized entry to the workplace, ensuring height work permit.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Fall of ladder/platform		Ensure that the ladder/platform should be placed on a flat and rigid surface	Ensure healthiness of ladder and its rungs before work. The ladder/platform should be placed on a flat and rigid surface.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Fire hazard			Remove any combustibile subastance from the fabrication yard. keep fire extinguisher and water &sand bucket at site.Ensure hot work permit before starting of job	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
Dismantling & Fixing of GCI and colour coated sheets	Electrocution			Ensure the insulation of grinding and steel cutting machine and its cable. Ensure that the power source is from a 30mA sensitive RCCB.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Noise from drill machine			Use good quality ear plugs/muffs. Take rest in between the job. Do not expose yourself to continuous noise.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes

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		Elimination/ Substitution	Engineering	Administrative	PPE	
	Fall of ladder/platform		Ensure that the ladder/platform should be placed on a flat and rigid surface.	Ensure healthiness of ladder and its rungs before work. The ladder/platform should be placed on a flat and rigid surface.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Falling of Object/ tools from height			Proper supervision to be done, restrict unauthorized entry to the workplace, ensuring height work permit.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Falling of workmen from height'		Ensure that the ladder/platform should be placed on a flat and rigid surface.	Use A-type FRP Ladder and one person must be holding the ladder at the time of climbing/decending. Have a firm grip on the ladder/platform and maintain a 3-point contact while climbing/decending on the ladder/platform. In case of platforms, ensure that top rail and midrails are healthy and strong.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
Tractor loading and unloading for shifting of materials at site.	Body injury (Slip/trip)			Have a 360 degree vision and be alert about the area of work. Use proper and healthy tools.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Body eye conact/ hand injury			Engage inline experienced work person, Use healthy and tested Tools.Use safety goggles to avoid any foreign material to go inside your eye.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Dust/Ash/fumes			Keep dust/fume mask with you. Use wherever needed.Check, whether the filters of the mask are clean before using. Use clean masks.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Falling of Object from height			Proper supervision to be done, restrict unauthorized entry to the workplace.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
	Poor Posture			Take Rest in between the job. Do not overstrech your body. Keep in mind about your body limits.	Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff	Yes
Emergency Safety Measures (Rescue/Fire Brigade etc):		Emergency Contacts-Main Control Room- 222, 233,244, Fire- 777, 222257, Ambulance- 248/337, Hospital-666				
Overall Job Risk Category-	HIGH					
JSA Review during PJB:						
Pre Job Briefing (PJB) is applicable to all persons involved with the task.						
Pre Job Briefing (PJB) Acknowledgement: I undertake that the JSA is communicated to me effectively						
Name	Agency's name	Signature				

ORISSA POWER GENERATION CORPORATION LTD.													
HAZARD IDENTIFICATION & RISK ASSESSMENT (OCCUPATIONAL HEALTH & SAFETY)													
FORMAT REVISION NO: 02/00			DATE: 11.12.08			DOCUMENT REVISION STATUS : R-			DOCUMENT REVISION DATE :				
SI. NO	ACTIVITIES	OCCURRENCE OF HAZARDS	HAZARDS	RISKS	EVALUATION OF RISK							Reference	
					QUALITATIVE			QUANTITATIVE			RPN		S/NS
		N/AB/E			LC	BC	IPC	A	B	C			
1	Cleaning activities	N	Exposure to dust	Respiratory problems	N	N	N	6	10	3	180	NS	
		AB	Exposure to micro organisms / bacteria during cleaning or repair of toilets / urinals / pipelines	Health hazards due to infection	N	N	N	6	10	3	180	NS	
2	Performing High & Medium risk jobs	N	Hazards due to performing the jobs without JSA, Job briefing and adequate supervision	Fatality/ Injury	N	N	Y	4	50	3	600	S	
3	Stacking of construction materials at work site	AB	Road accident due to dumping of construction material and work on road	Injury	N	N	N	4	30	3	360	S	
4	Transportation of debris	AB	Failure of vehicle due to overloading/unsafe driving /mechanical failure	Accident	N	N	N	3	20	3	90	NS	