

Format No: ER 5/10– F2, JOB SAFETY ANALYSIS (JSA), IB THERMAL POWER STATION, OPGC								
Serial No.	Department	Equipment	Location	Job description:				
	Civil Main Plant			AMC Civil Maintenance Jobs inside Main Plant Area at ITPS				
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/Abso rption	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 helmet, shoe, hand gloves, earplug, dustmask, goggles.							
Tools required	Phowrah, belcha, trowel, bucket, gainti, barricading tape, JCB, scaffolding materials etc							
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
				Elimination/ Substitution	Engineering	Administrative	PPE	

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1) Excavation of earth using JCB and manually.	1) Contact with live cable/equipment may cause shock/electrocution	na	Excavation clearance may please be taken before starting of excavation.	The existing live cables and water pipe lines to be rerouted as per needed.	na	Yes
	2) Fall (Slip/Trip)	na	Working site shall be cleaned properly.	na	na	Yes
	3) Struck by/against	na	Experienced operator shall be deployed for dressing/excavtion.	Workers shall be instructed to work carefully.	Use safety helmet, shoe, hand gloves and googles.	Yes
	4) Poor posture	na	4) Work safely and take rest in between.	na	na	Yes
	5) Fall (Down/Below) after excavation	na	5) Barricade the excavted area after excavation.	na	na	Yes
	6) Struck by against	na	na	Experienced operator to be deployed for excavation. Signal man to be deployed. Stay away from the swing area of JCB.	na	Yes
2) Sand filling, back filling, hammering,PCC and other cement conncrete works and using of JCB	1) Body/Hand injury	na	Work carefully.	Take rest in between. Avoid bad posture.	na	Yes

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for site cleaning	2) Contact with cement dust/Irritation on hand/leg	na	na	na	Safety goggles, dust mask and hand gloves to be used. RUBBER-WET CEMENT & COTTON-DRY CEMENT	Yes
	3) Struck by/against	na	Experienced operator shall be deployed for dressing/shifting of materials.	Workers shall be instructed to work carefully. Stand beyond the wing area of JCB. Signal man must be deployed.	Use safety helmet, shoe, hand gloves and googles.	Yes
3) Brick work and plastering	1) Fall (Slip/Trip)	na	na	Clean the working site properly.	na	yes
	2) Electrocution/arc flash	na	Work very cautiously	Work in presence of electrical person.	na	yes
	3) Noise & Exposure to cement dust	na	na	na	Use ear plug, safety goggles and dust mask.	
	4) Hand/Eye injury	na	na	na	Use hand gloves and googles	

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	5) Irritation on hand/leg for cement concrete works.	na	na	na	Use rubber hand gloves and gum boot for cement works.	
4) Cutting steel & Shuttering works	1) Body/Hand injury	na	Work carefully	Deploy trained workmen	Use safety helmet, shoe, hand gloves.	Yes
	2) Cutting of hand					Yes
	3) Contact with fire sparks	na	na	na	Face shield must be used and apron shall be used if required.	Yes
	4) Exposure to cement dust	na	na	na	Use safety goggles and nose mask.	Yes
	5) Irritation on hand/legs	na	na	na	Use rubber hand gloves and gum boot.	Yes
5) Erection and dismantling of scaffolding.	1) Struck by against	na	na	na	Work carefully. Use safety helmet, shoe, hand gloves properly.	Yes
	2) Fall from height	na	Erect a scaffolding for working at height and shifting of materials.	na	Use full body harness & anchore the lanyards properly.	Yes

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	3) Collapse of scaffolding.	na	The scaffolding materials along with the location shall be inspected by the competent person before starting of scaffolding.	Deploy trained scaffolders for erection & dismantling of the scaffolding. Certified scaffolding shall be used.	na	Yes
	4) Fall of objects from height.	na	na	The scaffolding area shall be barricaded.	Use safety helmet along with other PPEs.	Yes
	5) Hand/body injury	na	na	Deploy trained workmen only.	na	Yes
6) Shifting of materials to height (Colour coated new sheets)	1) Fall of objects from height	na	Properly tighten the rope with the sheets.	Barricade the ground area.	Use safety helmet alongmg with other PPEs.	Yes
	2) Struck by against	na	na	Work carefully, deploy trained workmen.	Use all PPEs.	Yes
	3) Cutting/injury of body parts					Yes
7) Fixing of roof sheets/removing old	1) Cutting of hand during using tile cutting machine	na	Double insulated machine to be used. Use correct tools. Ensure proper guard of cutting machine.Dont use loose hand gloves.	Work carefully, deploy trained workmen.	Use hand gloves.	Yes

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	2) Electric Shock	na	Use tested board,cable and machine. Ensure good condition power cable and certified board with RCB.	Work very cautiously. Be alert always.	Use ear plug.	Yes
	3) Struck by against	na	na	na	Work carefully. Use safety helmet, shoe, hand gloves properly.	Yes
	4) Body /hand injury	na	na	na		Yes
	5) Noise & Exposure to dust	na	na	na	Use ear plug, safety goggles and dust mask.	Yes
	6) Fall from height	na	1) Scaffolding to be made to ingress to the roof top. Certify the same by competent person before use.	1) Use adequate scaffolding tags.	Use full body harness & anchore the lanyards properly.	Yes

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		na	na	2) Use safety net and life line. Tightly fix both these with rigid support. 3) Maximum two persons are allowed to hook full body harness on each span of lifeline.		Yes
		na	na	Daily BP to be checked in plant gate of those persons who engaged for height works.		Yes
	7) Fall of objects (J hook, shets, other tools)	na	1) Use life line, net (2) Use S hook to shifting old sheet from roof.	One person to be deployed. Barricade the underneath area.	na	Yes
	8) Painting of wall and structures.	1) Fall (Slip/Trip)	The working site shall be cleaned.	na	na	Yes
		2) Struck by against	na	na	Work carefully. Use safety helmet, shoe, hand gloves	yes

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	3) Body /hand injury	na	na	na	hand groves properly.	Yes
	4) Eye inury/exposure to paint fume.	na	na	na	Use safety googles and dust mask.	Yes
	5) Work at height	na	Use certified ladder for work at height.	Handle the ladder at bottom.	na	Yes
9) Concrete dismantling	1) Fall (Slip/Trip)	na	Clean the working site properly. Don't go to the edge near by.	na	Use safety helmet, shoe, hand gloves, earplug, dust mask and googles.	Yes
	2) Exposure to cement dust.	na	na	na	Use safety googles and dustmask.	Yes
	3) Noise	na	na	na	Use earplug.	Yes
	1) Body/Hand injury	na	Work carefully	Deploy trained workmen	Use safety helmet, shoe, hand gloves.	Yes
	2) Cutting of hand					Yes
	3) Fall down below the floor	na	na	Barricade the drain working area.	na	Yes
	4) Exposure to cement dust	na	na	na	Use safety googles and nose mask.	Yes
	5) Irritation on hand/legs	na	na	na	Use rubber hand gloves and gum boot.	Yes

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10) Fixing of tiles	1) Fall (Slip/Trip)	na	Clean the working site properly.	na	Use safety helmet, shoe, hand gloves, earplug, dust mask and googles.	Yes
	2) Contact with cement dust.	na	na	na	Use safety googles and dustmask.	Yes
	3) Noise	na	na	na	Use earplug.	Yes
	4) Cutting of hand during using tile cutting machine works.	na	Work carefully.	na	Hand gloves must be used.	Yes
	5) Irritation on hand.	na	na	na	Use rubber hand gloves for fixing of tile.	Yes
11) Fixing of acrylic sheets.	1) Cutting of hand/ hand injury.	na	na	na	Use hand gloves during cutting and fixing of glass.	yes
	2) Fall (Slip/Trip)		Working site shall be cleaned.	na	na	yes
	3) Contact with moving parts.	na	Stay away/ Keep distance fro the moving equipments.	na	na	yes
	4) Fall from height	na	Work carefully, don't lean on the window outside.	-	Use full body harness and anchor properly.	yes
	5) Fall of objects from height	na	na	Barricade the ground area.	Use hand gloves having proper grip.	

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	6) Contact with moving equipments.	na	Don't go near by. Keep distance from moving conveyors.	Deploy trained workmen, supervisor should present.	na	yes											
Emergency Safety Measures (Rescue/Fire Brigade etc):		Emergency Contacts-Main Control Room- 222, 233,244, Fire- 777, 222257, Ambulance-															
Overall Job Risk Category- (High/Medium/Low) :	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															