

| 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 | | ITPS colony | Construction of Foundation for Bottom Ash Slury Pump House Shed, Over Flow Drain & Sump | | | |
| 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/ Electrocutation | 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, | | | | | | |
| 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. | Electrocutation/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 isolation. | 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 | |

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|-------------------------|--|--|-------------|--|--|---|
| | | Elimination/ Substitution | Engineering | Administrative | PPE | |
| | 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 overstrech 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 | |
| | 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 |
| 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 overstrech 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 |

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|----------------------------------|-------------------------------------|--|---|---|--|---|
| | | Elimination/ Substitution | Engineering | Administrative | PPE | |
| Centering and shuttering 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 | 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 |
| | 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 |
| | 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 |
| | Falling from height of workmen | | 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 scaffolding, ensure height work permit. | Safety shoes, hand gloves ,safety helmet, safety goggles, nose mask, ear plug/muff | Yes |
| Removing of construction debris. | 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 |

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| | | Elimination/ Substitution | Engineering | Administrative | PPE | |
| | 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 overstretch your body. Keep in mind about your body limits. | 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 |

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| | 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 overstretch 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 | | | | |
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