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| **Departmental Use Only** | |
| **Revision No: 06** | **Unit: MCD** |
| **Revision Date: 15.09.2023** | **Dept.: MECH** |

A. Work activity information

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| **Sr.No.** | **Details** | **Remark** |
| 1) | Task being carried out, their duration and Frequency: | Fabrication Dismantling and erection of Structural jobs  Frequently |
| 2) | Location (s) where the work is carried out. | Battery 1,Battery 2, Unloader Jetty, Briquetting plant |
| 3) | Who normally/occasionally carried out the task | Engineer in charge  Maintenance fitter/welder on the job  Contractor workmen on job |
| 4) | Who else may be affected by the work (For example visitors, subcontractors, the public) | Workmen working nearby |
| 5) | a)Has the personnel trained for performing the task  b) Any special training required | Yes  No |
| 6) | Is the written systems of work mandatory. If yes state the procedure no. | SP 44 |
| 7) | Is the work permit required for the task | Yes as per the area of the Job |
| 8) | Plant and machinery that may be used:  Eg : crusher, conveyor, crane, heavy earthing equipment, Truck etc, | Crane, Truck, Hydra |
| 9) | Any electrically operated hand tools are used | Grinder, Welding machine, pug cutting machine |
| 10) | Manufacturer’s or supplier’s instructions for operation and maintenance plant machinery and powered hand tools are available or not: | Yes |
| 11) | Chain block, tools and shackles such as wire rope, hydraulic jack etc are used. | Chain pulley block of rated capacity, slings, D-shackles |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | Structural members  Cylindrical  Approx 15000 kg max by F15 crane.. Other depending on capacity of crane |
| 13) | Is the material is required to be moved by hand. If yes Distance and heights of the place where materials have to move by hand. | 5 kg by hand (tools & tackles)  1 Mt height approximately max |
| 14) | Services used Eg: compressed air, oxygen, acetylene,  LPG gas, hydraulic oil, welding electrode for welding | Yes – Welding electrode for welding  Oxygen, Acetylene |
| 15) | Physical form of substances encountered during the work (For example fume, gas, vapor, liquid, dust/powder, solid): | Solid ,gas |
| 16) | Content and recommendations of safety data sheets relating to substances used or encountered:  ( this is applicable in case of chemical material) | NA |
| 17) | a) Relevant acts, regulations and standards relating to the work being done, the plant and machinery used and the materials used or encountered:  b) Is the activity is reviewed for compliance to statutory requirement | Gas Cylinder rule 1981  Yes |
| 18) | What is the data (s) required to be monitored during the activity and the frequency of monitoring. |  |
| 19) | Any information available from within and outside the organization on incident, accident and ill health experience associated with the work being done, equipment and substances used: | Incident on 17.05.06 for Slipping of Nylon rope (19/MECH/MAY/06)  Incident on (20/MECH/MAY/06)  Incident on 20.09.06 for fall of channel from roof Purling (44/MECH/SEPT/06)  Incident on 20.12.2006 for non locking of grating  Incident on 06.02.2007 for fall of material while fabrication.  Incident on 28-4-10 for fall of angle from height due to poor housekeeping  On 13/05/12 at 16.30 hours, during aligning of BF shell at stack level, one wedge has fallen down from stack platform to bustle platform. No person was working below. No injury to anyone.  On 02/02/15, One workman form MCK was pulling the chain of chain-pulley block for shifting the ms beam, Main chain impacted on his leg..  On 18.01.2019 during B shift one corroded MS channel at around half meter fell from 8-10 mt.height between PCM 2 and PCM3 discharge end. Workmen uses this area to enter pcm 2 and pcm3 very often. No injury reported. Area was fully barricaded and entry restricted.  On 11.08.2020 at around 11:10 PM, it was reported in dispensary that Mr. Mukesh belong to M/s RIECO is having Irritation, Redness, and watery eyes. After giving the eye drop, he left for home and joined duty on next day.  On 10.02.2023 Steel Carrier 200Ton Crane helper Mr. MD Noor Alam was moving outrigger fiber pad with rope attached to it. Rope slipped from his hand and pad hit his right leg bruising it. IP was referred to dispensary and first aid was given by the company doctor. He returned to work after the same.  On 01.04.2023 at around 10:50am Mr. Sudhir Naik (Electrical shift technician) was going from 2nd tap hole to tuyere platform for welding outlet inspection job. when he reached at this location suddenly hot metal chips came down rapidly in front of him, he just gets out and see the event properly in which he found that the structure erection job by MCK project team is under process at the top but no barricading done to highlight the nearby people simultaneously no fire watcher/standby person assigned to inform guest in this area. There is a chance of burn injury. IP had worn all required ppe on that time.  On 01.04.2023 at around 08.10am Mr. Syed Tabrez (Supervisor) slipped and was about to fall but balanced himself. After balancing himself he checked and found that 2 bolts were thrown on the pathway. He wore all ppe on that time.  On 17.04.2023 20mm Plate size 270\*150 fell from top CSP near main screen due to rusting condition and the same was witnessed by Mr.Tejbahadur singh. No injury reported.  On 06.05.2023 at 12:00pm there was a injury reported for Mr. Karan Dhurve 23/M, of Vaaman Contractor, who came to BF#3 dispensary today at 12.00 pm with history of sustaining cut injury on his right hand, when he was lifting channel while working at PCM II Location.  On 11.05.2023 During shifting the Oxygen cylinder manually , it slipped from above and came down straight through the staircase on the ground and damaged the newly constructed concrete foundation along with 1 civil team is working very close to this area.  On 02.07.2023 Mr. Sudhir Naik (Technician) went for ZSS checking at CB#6 Conveyor there he got engulfed in the spilled material (sludge).  On 06.07.2023 at around 3:40pm due to heavy wind & rain sheet fell from the height of approx. 10mtr at battery 1 compacting station hot coke car side near 84 oven and sheet size was approx. 3mtrs. |

**Hazards identified**

**Mechanical hazard -**

1. Trapping between two objects,
2. Fall of material, hammer, tools, slinged items, bolts, etc.
3. Fall of person from platform,
4. Entanglement
5. Impact of moving / slinged items.
6. Fall of material from height such as angles, channels, beams, plates ,bolts ,nuts etc. due to poor housekeeping.
7. Failure of sling, D shackle, chain pulley block
8. Failure of full body harness due to improper clamping, damaged rope, hooking on weak structure
9. Skidding of person due to poor housekeeping, oil spillage, uneven surfaces, broken bricks etc
10. Back pain while handling heavy load and improper posture
11. Cut injuries from sharp edges of items
12. Getting trapped / skid material stacked
13. Hitting of moving vehicles, and machinery in the plant
14. Slipping/Rolling of trolley while loading/unloading
15. Falling of cylinders due to improper fixing of protective M.S.chain
16. Fall of cylinder trolley due to failure of wheels
17. Explosion due to impact on the knob
18. Failure of the clutch / brake of hydra / material handling vehicles
19. Sliding/rolling of the material from vehicle.
20. Impact of moving / slung items, overturning / slipping of steel items.
21. Failure of rope
22. Bursting of tyre while moving / during erection
23. Jamming of the hand while locking the tempo/truck gates.
24. Getting trapped below Hydra because of failure of brakes or sudden jerks
25. Getting trapped between the swing portion & the body of Hydra
26. Getting hurt because of poor visibility
27. Impact of other vehicles
28. Non usage of PPE like shoes, helmet & safety harness, goggles
29. Alcoholism
30. Skidding of wheel stoppers
31. Human error
32. Overturning of vehicles due to uneven surfaces
33. Overturning due to loosing the centre of gravity.
34. Hitting of person while reversing
35. Incidents due to poor illumination
36. Failure of the workmen basket structure, temporary platform
37. Fall of person from height due to unbalance from workmen basket, temporary platform
38. Trapping of the person between basket and structure
39. Fall of workmen basket, temporary platforms due to failure of the clamping
40. Lifting of the truck due to unstable loading
41. Hitting on surrounding structures, while negotiating a turn
42. Fall of the Pal finger crane from the truck due to failure of mounting bolt
43. Failure of hydraulic system
44. Failure of hook of the crane
45. Fall of “falka” of truck during movement.
46. Fall of the extended boom from top.
47. Damage of overhead structure during marching of crane / hydra
48. Hitting / trapping of crane due to improper / non sequential operation
49. Bending of chassis due to non levelling of stabilizers
50. Failure of stabilizers
51. Failure of crane / chassis due to non levelling of crane platform with water level
52. Hitting of the boom due to fast operation.
53. Improper operation due to improper signalling.
54. Scaffold collapse caused by instability or over loading
55. Incident due to usage of mobile while driving / operation of crane / hydra / Palfinger/ Hiab basket
56. Trapping due to Improper jacking during crane maintenance
57. Fire due to fall of sparks welding / gas cutting
58. Back fire during gas cutting
59. Failure of welding hook due to improper / inadequate welding
60. Failure of welding hook due to welding on hard faced plates / unknown plates
61. Welding light may cause irritation & watery eyes by other crew members like fitters & riggers during fitment of structures.

**Human behavior**

1. Alcoholism,
2. Casual approach
3. No usage of PPE's.

**Physical hazard**

1. Vehicle emission
2. Pressure due to failure of air /hydraulic system
3. Burns

**Electrical hazard**

1. Electric shock from overhead lines or welding
2. Short circuit due to failure of electrical system
3. Electric shock from battery terminal

**Chemical hazard** -

1. Fire & Explosion
2. Co Gas poisoning

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| **Prepared By:**  Incharge Battery 1 Machine Mechanical Maintenance MCD | **Reviewed By:**  Head Mechanical Maintenance MCD |
| **Signature:** | **Signature:** |
| **Review Date:15.09.2023** | **Review Date:15.09.2023** |

**B Hazard Identification**

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| Sr. No. | Factors considered from the information above | Safety hazard(s) (Events) | Occupational Health Hazard(s) (Exposure) |
| i | Activity / Sub-activity (Refer Sr. Nos. 1, 2, 3 & 4): | Entanglement ,Trapping,fall from height | fall of oil in eyes, ears, mouth, |
| ii | Human Behaviours (Refer Sr. No. 6): | • Improper housekeeping • Non-use of PPE • Alcoholism |  |
| iii | Human Capabilities (Refer Sr. No. 7): |  |  |
| iv | Human Factors (Refer Sr. No. 8): |  |  |

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| Sign: |
| Prepared & Approved by: MR |
|
| Prepared By: | Reviewed By: |
|
| Signature: | Signature: |
|
| Date: | Date: |