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|  | **VEDANTA LIMITED –**  **VALUE ADDED BUSINESS** | **Format No.:** | **FRMT/MR/10** |
| **INTEGRATED MANAGEMENT SYSTEM** | **Revision Date:** | **10.07.2023** |
| **HAZARD IDENTIFICATION** | **Revision No.:** | **02** |
| **Page No.:** | **1 of 1** |

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| **Departmental Use Only** | |
| **Revision No: 06** | **Unit: PID1** |
| **Revision Date: 10.07.2023** | **Dept.: Production** |

A. Work activity information

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| **Sr.No.** | **Details** | **Remark** |
| 1) | Task being carried out, their duration and Frequency: | Mortar \ carbon injection of furnace, Ladle repair job, Runner repair job, Mortar injection machine shifting to cast house  During furnace shutdown PCM runner, spout repair, PCM deflector plate repair |
| 2) | Location (s) where the work is carried out. | Blast Furnace shell and cooling plates / Ladle workshop & near bag house /Cast house. PCM runner,spout, deflector. |
| 3) | Who normally/occasionally carried out the task? | Engineer in charge  Mason / mechanical fitter 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 in cast house or working in bag house area |
| 5) | a) Has the personnel trained for performing the task  b) Any special training required | Yes  Yes (Mobile crane operation |
| 6) | Is the written systems of work mandatory? If yes state, the procedure no. | Yes.  VL/IMS/PID1/PROD/WI/92 |
| 7) | Is the work permit required for the task? | Yes, depending upon the Job |
| 8) | Plant and machinery that may be used:  Eg : crusher, conveyor, crane, heavy earthing equipment, Truck etc, | Hydra, Hydraulic mortar injection machine.  Rotomac screw pump, monorail (for BF#2 cast house), Small excavator, 1 MT Capacity mixer, electrical vibrator |
| 9) | Any electrically operated hand tools are used | Yes, Mortar injection pump, carbon injection pump welding machine |
| 10) | Manufacturers 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. | Hydraulic power pack for pump operation, sling, d shackle, belt, chain block for machine shifting |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | MS, mortar, carbon paste, Hammer chisel, trowel, ghamela, drum, etc. |
| 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. | 1 kg by hand (tools & tackles)  1 Mt height approximately max.  25kg by hand, shifting by pulling trolley = 200kgs |
| 14) | Services used Eg: compressed air, oxygen, acetylene,  LPG gas, hydraulic oil, welding electrode for welding | Yes – Welding electrode for welding  Oxygen, Acetylene, hydraulic oil, compressed air. |
| 15) | Physical form of substances encountered during the work (For example fume, gas, vapour, liquid, dust/powder, solid): | Solid, liquid and 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 | Factory Act    Yes |
| 18) | What is the data (s) required to be monitored during the activity and the frequency of monitoring? | na |
| 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: | Nil |

2. From the above activity information hazards are to be identified and recorded below using Appendix 'A' of SP/41

**Hazards identified**

Mechanical Hazard

1. Fall of object.
2. Fall/Trapping of person in rotating parts
3. Impact of material, machinery, crane hook, etc.
4. Entanglement.
5. Getting trapped between rotating equipment.
6. Fall of grout material in eyes / body due to Hose puncture / gasket failure.
7. Falling inside the BF runner
8. Fall of person from height.
9. Fall of pump, tank, cylinder, bricks
10. Trapping of body parts in moving cylinder during mortar injection
11. Hit by coke/material thrown out from peephole due to explosion/furnace slipping.
12. Burning of any inflammable material due to contact of hot coke thrown out from peephole during explosion/furnace slipping.
13. Topple of mixer machine
14. Topple of excavator machine
15. Hit by castable bags while feeding to mixer machine
16. bursting of tyre by sharp metal piece/metal jam in crane bay
17. Hit by runner forma while mixing
18. Slipping of legs in between forma
19. Hit by excavator arm
20. Hit by vibrator needle

Physical hazard:

1. Dust inhalation.
2. Gas exposure
3. Burn injury from main runner, launders
4. Burn injury due to hot metal spillage.
5. Burn injury while working in front of Y spout
6. Burn injury from hot blow pipe.
7. Splashing of hot carbon paste, resin, in eyes/ body due to opening of valve during removing of hose/ nipple.
8. Fire.
9. Slippage of hose from air pressure clamps
10. Noise of compressor, drill machine
11. Darkness.
12. Congestion.
13. Suffocation
14. Burn injury due to hot gas/air coming out from blow pipe peephole during explosion/ furnace slipping.
15. Burn injury due to Hot metal and slag
16. Burn injury due to grouting material splashing out from nozzle

Electrical Hazard

1. Electric shock from welding machine.
2. Electric shock from grouting machine.
3. Electric shock from punctured cable

**Behavioral Hazard:**

1. Human Behavior -Workmen under influence of alcohol
2. Human Behavior -Violation of procedure
3. Human Behavior -Not wearing PPE’s
4. Human Behavior -Not concentrating while operating machine

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| **Prepared By:** | **Reviewed By:** |
| **Signature:** | **Signature:** |
| **Review Date: 10.07.2023** | **Review Date: 10.07.2023** |