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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.:** | **03** |
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| **Departmental Use Only** | |
| **Revision No: 03** | **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: | cast house crane operation in the cast house area  12-14 times in a day in each furnace |
| 2) | Location (s) where the work is carried out. | Cast house area |
| 3) | Who normally/occasionally carried out the task? | Company employees & supervisors. |
| 4) | Who else may be affected by the work (For example visitors, subcontractors? the public) | Visitors |
| 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. | VL/IMS/PID1/PROD/WI/08G |
| 7) | Is the work permit required for the task? | No |
| 8) | Plant and machinery that may be used:  Eg : crusher, conveyor, crane, heavy earthing equipment, Truck etc, | 5T & monorail crane etc. |
| 9) | Any electrically operated hand tools are used | Yes |
| 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. | No |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | Metal jam & slag jam |
| 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. | No |
| 14) | Services used Eg: compressed air, oxygen, acetylene,  LPG gas, hydraulic oil, welding electrode for welding | NIL |
| 15) | Physical form of substances encountered during the work (For example fume, gas, vapour, liquid, dust/powder, solid): | Solid jam |
| 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? | NIL |
| 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: | Yes |

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

1. At 17.00hrs cast house debris were dumped on road with 5T bucket crane
2. At 22:45 hrs while removing 5 T crane hook Mr. Bernel's (SESTECH CONTRACTOR) finger got pinched between rope and pulley. He was wearing all the PPE while removing hook. He was sent to dispensary for first aid. he reported back after the first aid.
3. On 04/04/2018 in 3rd shift at 00:20hrs in BF1 cast House 5T crane empty tray fell down from height of 2mtr near drill machine, no injury to any person. Cause of falling tray is due to loosening of hook lock plate bolt which resulted in coming out of hook from pulley.
4. On 09.09.2018 at 6:05pm in PID graphite particles entered in one of our employees. Umesh Gauns was wearing all the PPE's while on job. This has happened when the cast was opened, and he was standing towards drill m/c area Infront of man cooler.
5. On 01.10.2018 at around 16:00 hrs one Graphite particle was entered into Company workmen right eye while casting operation, which was removed in dispensary. He was wearing all protective gears including goggle. He resumed back to work immediately after removing the particle.
6. On 17/11/2018, at around 12.30 am, Mr. Rijwan Ali, a production contract workman belonging to Mukund S Parab approached dispensary with a foreign object in the eye. The same was removed from dispensary and he resumed duty.
7. On 18-04-2019 at around 11.50 hrs one of the maintenance workmen reported he was entering BF2 cast house (Near sliding gate) at the same time suddenly 5T hoist moved with the cast house tray. There was no injury to anyone. The siren of the same was not working, same was tripped and Production in charge was getting it rectified through electrical.
8. On 21.09.2022 at PID 1, BF1 Cast house at around 14:10 hrs, 5T Cast house crane with empty bucket was being taken inside for loading debris. Suddenly the wire rope gave way and the empty bucket fell. No injury reported.

Root cause: The bucket is not in the line of sight of the operator when taken outside cast house platform. This led to further lowering after the rope was completely lowered from drum thereby wounding in opposite direction.

Contributory Cause: No stopping limit to the drum from lowering further from the lowest point. The drum doesn’t stop rotating for lower operation once the entire rope is lowered.

CAPA: Corrective action- Snapped wire rope was changed with new one and after trials hoist was given in line.

Preventive action-

1) Cam type limit switch installation for the cast-house crane’s lower operation to be done. This will prevent drum from rotating further when rope is lowered to full length.

2) Nomenclature to be improved. In-spite of letter’s writing, direction arrows (pictorial) would help.

3) Operator’s checklist filling to be ensured religiously.

4) SOP & HIRA to be reviewed

**Hazards identified**

1. Fall of a person
2. Fall of jam tray
3. Snapping of wire rope
4. Impact of tray to the personnel moving around
5. Fall of material from top
6. Electric shock
7. Human Behavior -Nonuse work instruction
8. Human Behavior -Improper house keeping
9. Inadequate local lighting
10. Ignoring the person & equipment’s on the way of crane operation
11. Lifting the material more than its capacity
12. heat
13. Dust inhalation
14. Burning due to contact with hot debris
15. Pinching between wire rope and pully
16. Poor illumination
17. Loosening of hook lock plate bolt
18. Contact of person with crane tray
19. Entry of foreign particles in eye
20. Over traveling of crane
21. In operative limit switch
22. Impaired vision due to glare of hot metal
23. Fall of casthouse crane bucket

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