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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: 01** | **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: | Hot metal transfer  5-6 times a day 10-15 minutes |
| 2) | Location (s) where the work is carried out. | PCM area |
| 3) | Who normally/occasionally carried out the task? | Contractor`s labourers, 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. | Yes.  VL/IMS/PID1/PROD/WI/14L |
| 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, | Hot Metal cranes, ladles |
| 9) | Any electrically operated hand tools are used | No |
| 10) | Manufacturers or supplier’s instructions for operation and maintenance plant machinery and powered hand tools are available or not: | NIL |
| 11) | Chain block, tools and shackles such as wire rope, hydraulic jack etc are used. | Nil |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | Liquid hot metal  35 tons |
| 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. | Nil |
| 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): | Liquid |
| 16) | Content and recommendations of safety data sheets relating to substances used or encountered:  (This is applicable in case of chemical material) | No |
| 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. On 15.09.09, while transferring the hot metal into another ladle which was having skull, some metal spilt out on the land due to bubbling of skull.
2. On 25.06.07 at around 15:40hrs in BF2 area ladle was being tilted to pour metal into another ladle. While the ladle started to fill other ladle, operator tried to lower the 10t hook with the help of radio remote. The 10-ton hook tripped. As the ten-ton tripped, he tried to switch on & switch off twice and then lowered the 10 ten. By this time the ladle got filled with the metal and over flew over the pin meant for 10-ton hook.
3. On 18.11.05 at around 6:00hrs in the crane bay area, the hot metal ladle was to be poured in the other empty ladle which was kept near the tilter /PCM 3. While doing so the 40t hook came out of the ladle trunion resulting in the spillage of hot metal on the ground. The crane control panel room was completely destroyed. The furnace was shut down for nearly 24 hrs.

Cause: The operator of the EOT crane, by mistake rested the ladle with hot metal on the empty Ladle while pouring. He lifted the 10t hook crane without realizing that the ladle has already rested, and hence the ladle came out of the 40t hook and the entire quantity of metal in the ladle came out and spilled on the ground. A part of the hot metal entered the EOT crane panel room & damaged the Panels.

1. On 27/9/18, at around 11 am, on site visit at BF 1 HMC area, PID 1, it was observed that the Hot metal crane bay access control system was kept bypassed. Immediately Production HOD was informed to normalize the same.

**Hazards identified**

1. Contact with hot Metal
2. Fall of ladle due to snapping of wire rope
3. Fall of ladle due to resting on another ladle
4. Spillage of metal due to collision of cranes
5. Spillage of hot metal due to boiling of metal
6. Spillage of metal due to overflow of ladle
7. Spillage of metal due to ladle puncture
8. Explosion due to spillage of metal
9. Explosion due to water clogging
10. Fire
11. Impact with ladle
12. Human Behavior -Nonuse of PPE
13. Human Behavior -Nonadherence to Work instructions
14. Human Behavior -Improper house keeping
15. Inadequate local lighting
16. heat
17. Ladle Puncture
18. Damage of crane due to metal splashing

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