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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** |
| **Page No.:** | **1 of 1** |

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| **Departmental Use Only** | |
| **Revision No: 02** | **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: | Preparation of casthouse  12 times per day per furnace |
| 2) | Location (s) where the work is carried out. | Casthouse 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. | VL/IMS/PID1/PROD/WI/08 |
| 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, | Monorail crane |
| 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: | Available |
| 11) | Chain block, tools and shackles such as wire rope, hydraulic jack etc are used. | Wire rope |
| 12) | What materials are handled? Size, shape, surface character and weight of materials that may be handled: | Solid irregular shape |
| 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. | Wheelbarrow movement for 10 mtr  Monorail crane tray of 0.5 mtr |
| 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): | Hot debris of metal, slag, sand, crow bar, lancing pipe hook, shovels & wheel barrow Etc |
| 16) | Content and recommendations of safety data sheets relating to substances used or encountered:  (This is applicable in case of chemical material) | NIL |
| 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? | Dry and wet bulb temperatures are monitored |
| 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. 17.09.2001, Mr.Prasad Naik met with an accident burnt his leg
2. 28.08.2003 skimmer plate area was not baricaded
3. 16.09.2003, contract labour met with an accident while loading the debris in casthouse
4. 28.11.2003 10 t crane missed hitting the personnel working in the casthouse
5. 16.12.2003, hot sand went into the eyes of the operator (Umesh Gawas).
6. 16.06.2004, labour met with burn injury while cleaning the main runner.
7. 17.12.2004, person met with burn injury (BF2) due to metal splash near PCM4 as the operator pushed the metal from the spout
8. 23.01.2005 Operator met with burn injury while removing the jam
9. 16.03.2005 in BF1 Rama gawade met with burn injury while making the slag dam
10. 15.04.2005, while making the dam the wooden handle of the shovel broke in the middle.
11. On 9.05.05 while removing slag jam, leg guard moved, metal piece entered in the shoes from behind
12. On 13.05.05 while pulling the jam from the runner hooked slipped and small piece of slag got stuck to his leg guard, superficial burns
13. On 13.05.2005 Air hose near mudgun of BF2 fell on the person (Tulsidas Gawas)
14. On 10.05.05 hot scaling from blow pipe fell from top and entered into his overcoat
15. On 27.03.2005While shifting the jam tray with the help of 5t crane wire rope snapped and tray fell down
16. On 09.07.2005, while placing empty jam tray rope got cut due to malfunctioning of the limit switch
17. On 05.08.2005, Mr.Jude slipped in the slag runner.
18. On 11.09.2005, while cleaning the EL some dust particle entered in the eyes of the person standing nearby.
19. On 13.09.2005, contact with hot piece of slag while cleaning the runner.
20. On 19.12.2005 at 06.45 hrs, slipped over the slag runner cover and got injured
21. On 06.12.2005, casthouse barricade damaged
22. On 31.05.06 while cleaning the jam in the Emergency Launder with the help of a crowbar, person’s left hand middle finger got stuck with a small pipe of hand-railing on the Emergency Launder side
23. On, 25.01.07, While pulling the jam from the the main runner with the help of hook, the hook got straightened and the operator fell down
24. On 16.08.07, While walking down the 2 steps in the Furnace 2 Cast House (near mud gun), he missed a step and landed on the next step with impact on his right heel.Mr. Ashok Todkar
25. On 09.06.2009 at around 23:40 hrs injured while loading the slag jam, from the side of slag runner in 5t hoist crane bucket, the jam broke into two pieces. One piece fell on the left forearm causing slight cut injury
26. 26.02.10, contractor workman met with burn injury while cleaning slag jam from the main runner.
27. On 6.12.11 in BF2 cast house area, the contractor (name: Dinesh) got superficial injury (bruising type) at the back of his body at the time of clearing the jam from the main runner with crowbar. During the process, the crowbar slipped from the jam and Mr. Dinesh lost his balance and fell over the drill machine where the burnt drill bit got stuck to his back. After the first aid, he resumed his work. Then he undergone alcohol test and found zero. At the time of incident, he was working with full safety PPEs at the workplace. He was given safety pep talk before commencing the job at 7:05 hrs by the cast house engineer (Anand Ramalingam).
28. In BF1 on 02/07/2012 in the first shift during cast closing, cast house operator while clearing the tap hole spout, slag/metal entered into his left shoes from his shoes tongue area. He was wearing all the PPE’S i.e., safety shoes, leg guard and safety overcoat. The injured person resumed work after first-Aid.
29. Platform plate near Metal Spout No.2 near slag runner and emergency launder junction gave away when Cast House Engineer was walking on platform at 20:45 hrs. No first aid injury took place.
30. On 08.-2.13 during first shift at 9:30 hrs, while removing main runner metal jam (near tap hole area) Mr. Sameer Fadte (15190) got an injury to his right foot as the crowbar got slipped from his hand. He was sent to Dispensary for the treatment.
31. On 25.02.13 in first shift at 10:30hrs, during running making, while removing main runner metal jam (near tap hole area) Mr. Tarkeshwar Tiwari (7416) his right-hand finger got hit by the channel provided for removing jam resulting in finger injury. Treatment was given in control room and then he was sent to dispensary for further treatment.
32. Mr. Govind Gaunkar suffered finger injury while cleaning blowpipe. He was holding a bar and other man was hammering, while doing so Mr. Govind Gaunkar suddenly removed his right hand which came in contact with the direct blow of hammer causing injury to his right-hand forefinger. He was then referred to company’s Dr. for further treatment.
33. On 13-09-2013 At 07:45 hrs in BF2 Cast House, contract workmen who was engaged in Main Runner preparation while loosening runner jam crowbar slipped from his hand and fell on his left foot toe resulting in minor injury. He resumed duty after first aid.
34. On 14.5.2014 At 22:35 hrs In BF2 cast house, one contractor worker Mr. Mangal got a small cut on his left-hand index finger while removing the runner jam with crowbar. He was taken to dispensary for first Aid from there he was moved for further treatment. Root cause: Loss of balance while clearing the runner jam Corrective and preventive action: 1. Ensure proper position & posture for performing the task 2. Retraining to workers
35. In BF1 on 15/06/2014 in the 2nd shift after closing 1st shift last cast no.7710, Mug Gun operator Mr.Raju Mainekar went for filling M/Gun, as soon as he kept his foot on checker plate of EL runner, plate got slipped from the frame provided and his left leg went down into the gap formed, Immediately taken to dispensary for first aid, given rest and then returned for duty. Cause: Dislodging of loose plate., CAPA: 1. All loose plates which are fitted in such type of areas are to be ensured for their proper seating. 2.The person should ensure his stability while performing his job. 3Mech to explore some anchoring arrangement to ensure the plate remains in the correct position.
36. On 26/06/14 at 07:10 am while cleaning below tap hole Mr. M. Mane right hand index figure got press between crowbar and angle provided near the tap hole. He has been given first aid treatment in the PID dispensary. CAUSE: • Loss of balance while clearing the jam CAPA: 1) Ensure proper position & posture for performing the task 2) Retraining to workers
37. on 12.07.2014 In BF2 cast house, while cleaning the main runner, some hot particle fallen on the face of Raghoba Parab. There was slight skin burn. He was wearing goggle. He reported to Dispensary and resumed work.
38. On 03.03.2015 Mr Umesh Phadte was clearing metal jam from bypass runner of BF1 at 22:45hrs his left hand ring finger got pressed between crow bar and runner edge, minor injury to his finger, he was referred to dispensary,He reported back to work after the first aid.

**Hazards identified**

1. Contact with hot metal sand &debris of metal & slag
2. Fall of a person while removing the jam
3. Fire & Explosion
4. Pressure in oxygen line
5. Fall of skimmer plate while shifting
6. Fall of jam tray
7. Fall of a person in the runner while making the dam
8. Contact with hot pieces of jam while pulling the jam
9. Contact with dust
10. Contact / injury with cast house tools
11. Fall of material from top
12. Slipping of person while walking
13. Human Behavior -Nonuse of PPE & WI
14. Human Behavior -Improper house keeping
15. Inadequate local lighting
16. Crossing the runner without using metal grating
17. heat
18. Injuries due to contact with cast house debris while loading & transporting from one place to other
19. Contact with burnt (hot) drill bit
20. Fall of person due to wearing out of platform or staircases
21. Injury with crowbar during metal jam removal

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