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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: 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: | Direct loading of pigs from PCM into truck, daily |
| 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/14N |
| 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, | Trucks |
| 9) | Any electrically operated hand tools are used | Nil |
| 10) | Manufacturers or supplier’s instructions for operation and maintenance plant machinery and powered hand tools are available or not: | NO |
| 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, Solid pig iron  Max. 6 kg each. |
| 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 | Compressed air |
| 15) | Physical form of substances encountered during the work (For example fume, gas, vapour, liquid, dust/powder, solid): | Liquid hot metal, solid pig iron. |
| 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 23rd May 2015, at around 12:45 hours during pouring on PCM 2 one pig iron fell outside the carrier of truck no GA- 04 –T- 2218 on the left-hand side rear view mirror causing it to break. The truck was filled with about 6 T pigs at that time.

Causes: Gap between the chute and slab resulted in pig iron falling.

C&P action: All such gaps to be checked & rectified.

1. On 25th May 15, At 11:45 hrs one pig from discharge end chute of PCM 3 fell down on truck no.0675 left side door handle and handle broke.

Causes: Pigs from protective mesh are not secured. There is a gap due to which pigs are falling. Mesh is tied with cable.

C & P action: Mesh is to be clamped instead of tying.

All meshes to be checked.

1. On 5 March, at around 13:45 hours during pouring on PCM 4 one medium size pig fell outside the carrier of truck no GA- 04 –T- 2218 on the right-hand side rear view mirror

Causes: There is a gap b/w two chute screens due to which pigs are falling.

CAPA: 1. Gap checked & rectified immediately.

Pigs fall Protective screen width and length increase to avoid falling of pigs and formation of gaps.

1. On 9 April 2016, at 19:00 hrs during pouring of hot metal on pcm #4, one pig fallen down on the front driver side side mirror of Truck no.GA04-T-3242 from the top discharge end resulting in breakage of side mirror.

Pig fall from top of Previous installed pig fall protection screens.

1. Pig fall area need to Complete sealing from top to avoid bouncing and falling of pigs.

2 All gaps in-between the diverting chute need to check in PCM 2 &3 & rectified.

1. On 5.3.2016 At around 13:45 hours during pouring on PCM 4 one medium size pig fell outside the carrier of truck no GA- 04 –T- 2218 on the right-hand side rear view mirror causing it to break. There was no injury to anyone.

Causes:

There is a gap b/w two chute screens due to which pigs are falling.

CAPA

1. Gap checked & rectified immediately.

2. Pigs fall Protective screen width and length increase to avoid falling of pigs and formation of gaps.

1. On 27/3/2016 during pouring on pcm-2 one small pig fell on left hand side rear view mirror of truck No GA-04 T 2218 causing it break.

Causes: There is a gap at PCM discharge end chute due to which pigs are falling.

CAPA

1. Gap to be rectified immediately.

2. Similar inspection to be made at PCM 3 & 4.

3. Previous installed pig fall protection screens to be checked on all PCM for worn-out if any.

1. On 9 April 2016-At 19:00 hrs during pouring of hot metal on pcm #4, one pig fallen down on the front driver side side mirror of Truck no.GA04-T-3242 from the top discharge end resulting in breakage of side mirror.

Causes: Pig fall from top of Previous installed pig fall protection screens.

CAPA: 1. Pig fall area need to Complete sealing from top to avoid bouncing and falling of pigs.

2 All gaps in-between the diverting chute need to check in PCM 2 &3 & rectified.

1. On 30.11.16 at around 16:00hrs while Reversing pig loading truck no GA05 0674 Bumper got slightly brushed on left side with JCB Bucket, JCB NO GAO3 P3699 was moving towards Truck unloader side & truck was reversing for parking on PCM3, Truck was guided by pig shifting incharge by use of whistle. Both truck & JCB drivers namely Timanna Hebbal & Ajaykumar Prajapati found negative in Alcohol test. No injury.

Causes: JCB operator stop the JCB while proceeding very close to the reversing area of truck. Contributory Cause: No road Demarcation for reversing pig loading truck.

CAPA: 1. Operators/driver to be more vigilant while working in plant areas.

2. Operators & drivers briefed about the incidence and instructed do’s & don’ts in the activities.

3. Demarcation of area to be made for pig loading truck to avoid reversing on main road.

1. 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.

CAPA: Possibility of in-house Project team with structural expertise should carry out inspection.

1. On 08.05.2019 in 1st shift at 11.30am Near PIG SHIFTING area Hyva bearing no. GA07F7517 was parking on roadside towards pig shifting cabin. While parked vehicle was moving towards the PCM 4 hit the vehicle coming from left side bearing no GA01T9332 9 (crane truck). No injury to anyone.
2. On 01.07.2019 at around 16.25 hrs Mr. Manik Kisku contractor workman (Kudneshwar contractor) got minor cut to his upper lip with the lancing pipe hook while removing the pigs from below PCM 2. He was wearing all the PPE. He was given first aid at dispensary and IP resume back to work.
3. On 20.11.2019 at PID-1 dispatch, around 23:40 hrs one BF3 pig truck bearing registration no KA-35B-2440 (Deepraj Transport) lost control while taking turn (after weighment at Phillip weighbridge) and hit the trench and cable tray nearby. Alcohol test of the truck driver Mr. Chandrakant R. Sonshikar done at PID-1 dispensary and found negative. No injury to anyone.
4. On 19.11.2020 at 02:30 hrs. While removing the vehicle no GA05 T 1669 after pig loading from PCM 2 windshield glass was found broken. Possible reason was not known but half an hour before at 02.00 hrs. Vehicle no GA08 U 4938 one rear tyre got burst while removing the vehicle from PCM 2.

Cause of tyre burst can be foreign material on PCM area enter in the tyre and foreign might be hit on wind shield and broken the glass.

CAPA: 1. Condition of tyre to be checked before vehicle enters the plant – Available in check list

2. Quality of the wind shield glass to be reviewed.

3. Regular levelling / scraping of MP 5 road to eliminate foreign material

**Hazards identified**

1. Contact with hot water
2. Contact with hot fumes.
3. Contact with Metal chips
4. Pig falling on person/Truck
5. Fall of a person
6. Truck catching fire
7. Noise pollution leading to deafness
8. Metal chips/Pigs falling on Truck glasses
9. Collision of trucks carrying pigs with JCB/Hitachi
10. Fall of loose material from crane walk ways/ Person getting struck with hand tool.
11. Misjudging while lifting the pig.
12. Misjudgement from driver.
13. Heat
14. Minor metal eruption into truck

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