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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: 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: | Operation of sizer plant, continuous and as and when required |
| 2) | Location (s) where the work is carried out. | Raw material area, BF1 & BF2 |
| 3) | Who normally/occasionally carried out the task? | company employees, contractor employee & 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/12B |
| 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, | No |
| 9) | Any electrically operated hand tools are used | Electrical Motors |
| 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: | Iron ore, size ranging 10-30 mm |
| 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): | Iron ore fines |
| 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. On 05.01.05 while replacing VT4 in BF1 the material was charged from top.
2. On 05.03.2005 at 17.15 tierod entered into the cabin got struck to the back of the wheel loader operator-Causing an injury-Sunil Naik (P.P.&B. operator).
3. 30.06.2005, wheel loader damaged the sizer hopper after filling the ore in BF2.
4. On 16.05.04 in the BF2 sizer plant shackle got crushed between the trolley belt wheels-Aniruddha Survade.
5. On 26.01.08 during 3rd shift while filling bunkers BF#2 sizer plant V/S was running & suddenly tripped. It was observed that V/S motor to cordon shaft bolts was sheared off & shaft along with coupling fell into the coke shed by breaking the safety guard, which is around 15 m away from the sizer plant.
6. On 11/07/2010, in B Shift at 22:30 Hrs Mr. Jayanth Jose, W/L Operator of Bhavana Earth Movers was operating his machine at BF2 sizer plant and was shifting the fines from below the sizer fines chute (near VC1 bunker) to the area below ore fine bin, while moving towards the ore fine bin with a loaded bucket he steered in right direction at same time the weight shifted in the front side and the bucket touched the ground and the rear wheels lifted in air at 80 degrees. Operator safely jumped on the ground without any injury. Mr. Jayanth was sent to dispensary for alcohol test, the results were found negative.
7. On 03.04.2021 at ~ 3:30 hrs, rear tyre of W/Loader burst with huge sound while loader was coming back after filling sinter in VC1. Due to tyre burst, on ground sinter particles (less than 5 mm size) flew on both sides and fell over Mr. Deepak Salgaonkar and Mr. Buju Murmu (mukund contractor) who were standing at a distance of 12-15 mtrs on right and left side of W/loader respectively. No injury to them. Physically no harm also. Both continued their work.

Cause: Excessive wear out of tyre (attached picture)

Nonprofessional approach of service provider of fitting worn out tyre on running machine (creating unsafe condition)

Contributory Cause:

Worn out tyre surface could have caused penetration of foreign material leading to bursting of tyre.

CAPA: 1. strict checklist compliance to be followed at workshop for only healthy condition spares to be fitted.

2. Competent person of service provider for deciding on tyre condition and of changing frequency to be decided as most machines are business partners.

3. Shift wise cross check by area in charge and on equipment checklists.

4. Condition of tyres to be checked before vehicle enters the plant or checking spare tyres being brought inside plant after repair.

1. On 19.09.2022 in PID1, BF1 side at around 08:45hrs Wheel Loader (Operator Mr.Nazim Hussain of Bhavana Contractor ) after feeding Limestone in bunker was reversing, same time Sinter shifting truck ( GAO4T 3906) came very close and stopped,Wheeel loader back portion brushed his number plate, as reported by my supervisor Mr. Kalpesh Sawant, myself visited at site by that time Truck already left the site. Wheel loader operator Alcohol test was done and found Negative.

Root Cause: 1. Safe area/road exit-entry for sinter vehicle feeding was not identified

Contributory cause:

1.Possibly of sinter truck brakes being not effective enough to stop immediately on seeing the wheel loader. (Truck and driver did not report for the investigation after the incident)

2.Lack of truck movement protocols and controls in place for safe movement of vehicles/Wheel loader

3.Poor judgement by the driver due to blind spot (due to vegetation)

CAPA: 1. Explore possibility for movement of material from yard, concerned department to block the road fully to prevent other vehicles from entering the same road by sending communication regarding the same.

2. SOP and HIRA to be reviewed

**Hazards identified**

1. Falling of material from top.
2. Person getting entangled with the conveyor belt.
3. Shovel colliding with vehicles/people in the area (especially when reversing from the hopper site)
4. Person falling from the top.
5. Electrical shock.
6. Suffocation
7. Cleaning the TRF screen without following the laid down procedure
8. Human Behaviour -Not using P.P.E
9. Human Behaviour -Not following work instruction
10. Improper housekeeping
11. Overloading of wheel loader bucket causing imbalancing of wheel loader
12. Collision with other vehicle or HEMM

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