**WORK INSTRUCTIONS FOR** **ORE ADDITION TO LADLE**

# OVERALL RESPONSIBILITY: Area In charge

**Hazard identification:**

1. Splashing of slag formed due to metal reaction with lumpy ore

2. Explosion inside ladle due to metal contact with very high moisture of ore

3. Contact with hot Metal

4. Fall of ladle due to snapping of wire rope

5. Fall of ladle due to resting on another ladle

6. Spillage of metal due to collision of cranes

7. Spillage of hot metal due to boiling of metal

8. Spillage of metal due to overflow of ladle

9. Spillage of metal due to ladle puncture

10. Explosion due to spillage of metal

11. Explosion due to water clogging

12. Fire

13. Impact with ladle

14. Non-use of PPE

15. Nonadherence to Work instructions

16. Improper house keeping

17. Inadequate local lighting

18. heat

19. Burning due to contact of hot metal

20. Damaging of Crane due to metal explosion.

# Procedure:

1. Sudden contact of metal with moisture may lead to explosion hence this activity must be done with utmost care and under close supervision
2. MOC to be reviewed and engineering controls to be established before starting next trials
3. Ensure everyone working in the area including operators and contract workers is aware of the activity being carried out, its hazard and control measures. Trainings and pep talk to be given including this aspect
4. Ensure all barricades are in place, remove all at risk personnel.
5. Ensure no one is working in tail end or under the PCM platform.
6. Check wheel loader bucket loaded with lumpy ore to ensure no water is carried in it.
7. Ore should be added to ladle minimum 30 minutes prior to metal transfer so that its moisture gets dried out with heat in the ladle
8. Ore should not be added to cold/new ladle/Bottom Jam ladle.
9. The ladle added with ore should be placed in between PCM 3 and PCM 4 tail end(Sand stacking area)
10. Reaction with metal forms additional slag hence sufficient space should be left in ladle to accommodate this slag, if not this slag will overflow from ladle
11. No personnel should be allowed to stand near the ladle in which ore is added.
12. Ore should be issued as per SOP of theoretical production declaration and all necessary documentation should be maintained as mentioned in SOP
13. Ore addition process to be done under close supervision of PCM in charge.
14. The ladle car should be moved away from the ladle prior to metal transfer in the ladle with ore
15. After metal is transferred and slag overflow from the ladle stops the ladle will be lifted by the crane at least 15 minutes later.

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| **Prepared By:**  Head – Production PID I | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Head – Pig Iron Division |
| **Signature:** | **Signature:** | **Signature:** |
| **Date: 15.07.2022** | **Date: 15.07.2022** | **Date: 15.07.2022** |

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| 15.07.2022 | Procedure for ore addition to ladle | Change in format | 04 |
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