**WORK INSTRUCTIONS & SAFETY PRECAUTIONS FOR CUTTING AND WELDING ON THE BLAST FURNACE GAS LINE**

**Responsibility**: Shift superintendent & Furnace In charge

**Identified Hazards:**

1. Fall of a person causing injuries
2. Trapping between two objects
3. BF Gas poisoning
4. Fall of material
5. Contact with hot metallic shell
6. B.F gas explosion
7. Nonuse of PPE
8. Improper house keeping
9. Inadequate local lighting
10. Crowding at the job site

**Significant Aspect**:

1. Fire &explosion
2. Emission of BFG
3. Heat generation

**Procedure:**

1. Isolate the gas line by water sealing (minimum two water seals) and blanking the gas line if not take furnace shut down as per procedure.
2. Open all relief valves in the concerned gas line.
3. Steam purge the concerned gas line till clear steam is visible from the extreme end relief valve. Continue the steam purging for half an hour.
4. Ensure that the two CO detector is carried to monitor the gas levels.
5. Open all the required inspection doors & also open the drip pot flanges of the concerned gas line to be air purged. In case of furnace shut down, connect the gas line to the flare stack by dropping the water seal of the concerned gas line & keeping the flare stack valve open for negative drafting.
6. Isolate the concerned gas line by putting a blank & GEL gas line by water sealing & closing shut-off valve.
7. Close all steam valves to the gas lines, after steam purging.
8. Use all mandatory PPEs before going for gas inspection & inspect for any overhanging material before starting job.
9. Ensure the proper illumination of the area before starting the job.
10. Ensure no persons are working in dust catcher or any other enclosed area in the gas line, before giving clearance to the mechanical maintenance dept., for cutting and welding on BF gas line.
11. Hand over the gas line to mechanical maintenance dept. for repairs
12. If any flame or minor explosion is observed in gas line due to CO presence during cutting and welding, Job to be stopped immediately and gas line to be re-purged.

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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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