**WORK INSTRUCTIONS FOR** **OVERHEAD TANKS CLEANING (BF-1 & 2)**

**CRITERIA: Cleaning of overhead tank by descending in them.**

**Responsibility: Utilities In charge**

**Identified Hazards:**

1. Mechanical Hazard - Falling from height
2. Falling of material
3. Chemical - Presence of CO Gas
4. Physical - Burning due to Hot water
5. Electrical Shock due to light/Pump.
6. Nonuse of PPE
7. Improper house keeping
8. Inadequate local lighting
9. Running in hurry & getting hurt
10. Oxygen deficiency

**Significant Aspect:**

1. Usage of water.

**Procedure:**

**This is a confined space; refer SP 44Y for requirement and detailed guidelines for working.**

**Please follow the following procedure**

**FOR MORE DETAILS REFER CENTRALISED CONFINED SPACE ENTRY SOP-VL/IMS/VAB/SP44 Y**

Confined Space Checks before job start up:

1. Before Entering in Confined Space ensure –
2. Inside temperature should be less than 40⁰C.
3. CO Level should be 0 ppm and O2 level must be 19.5% to 23.5%
4. Attendant must ensure proper illumination, if illumination not found ok, he must inform concern electrical person to provide hand lamp or halogen.
5. Take the work permit from production-in-charge, Safety, electrical, mechanical for entering Confined Space.
6. The workmen (Entrant) who is trained and certified by SBU Head and having valid confined space gate pass should perform the activity and he can be replaced (in emergency) only by certified entrant.
7. A standby (attendant) who is trained and certified by SBU Head and having valid confined space gate pass should perform the activity and he can be replaced (in emergency) only by certified attendant.
8. Standby person who shall be positioned outside the confined space, must have no other duties other than monitoring people and conditions inside the confined space and coordinating with rescue personnel (he must have contact number of rescue team members) if required.
9. Standby (Attendant) person has to log down the In/Out entry of all entrants and ensure that entrant should be come out after 30 minutes from confined space for normal jobs.
10. In some cases, In/Out time may be relaxed /extended based on the risk involved in the particular confined space.
11. Check Internal atmosphere of the space for sufficient oxygen content (19.5% to 23.5 %) flammable gases and vapors, and the potential for toxic air contaminants by the use of multi gas detector, if required use pump with extension before entering. If there is any deviation, do not enter into confined space.
12. Check for the presence of Chemical asphyxiates such as Carbon monoxide (CO gas detector). It should be 0 PPM
13. Check inside temperature and it should be in the tolerable range (25°C to 40°C). If the temperature is not within limits, then appropriate ventilation to be used to normalize the temp.
14. Check for suitability of equipment that is used at the confined space.
15. Check any dust due to which visibility is reduced or respiratory tract is irritated.
16. The sign-in and sign-out of all persons entering into confined Space should be recorded.
17. Use 24V DC supply illumination to avoid electrocution/electric shock.
18. Cutting or welding jobs inside the confined space should be carried out after checking for any explosive environment (LEL should be <10%) and by providing localized suction or heavy-duty exhaust systems to prevent accumulation of gases inside the space.

Please note that this area is considered as Confined Space so needs to maintain the checklist of the activity. All In time and out time details of entrants, levels of gases to be logged in checklist (yellow copy) or in any alternate document and to be documented.

**Role of Rescue Team**

**As the work is being carried out inside confined Space, in an emergency victim can be taken out by use of rescue apparatus such as stretcher. However, attendant should call ambulance which is fully equipped. However, rescue team members should take a charge of the situation.**

1. Unauthorized operation or repair of any equipment is a punishable offence
2. Use of mobile phone is strictly prohibited.
3. Close all the makeup valves viz. Napoli line, Bandhara line & cooling tower to overhead makeup line. Padlock all these valves.
4. Confined space training must be given.to Person working there.
5. Continuous monitoring of oxygen level to be ensured using O2 monitor for safe working.
6. Open the manhole cover for man entry. Provide hard barrication on all sides. Sufficient openings are available on tank top for proper ventilation.
7. Personnel should enter the tank through manhole using ladder and safety harness.
8. The supervisor should ensure that that the personnel involved in the activity is wearing all the needed PPEs. This job has to be carried out under the close supervision of the supervisor.
9. The supervisor should ensure regular breaks after 20 minutes for taking fresh air for person working inside the overhead tank. Rotation of the people involved in the activity should be done frequently. Logging of person entering/moving out from inside the tank should be done.
10. Drain out maximum water from the tanks with the help of submersible pump.
11. Controlled draining of water should be there and drained water should be properly thrown out so that accumulation of water in a single area doesn’t take place.
12. Check the water level inside the tanks and ensure that it is less than 200 mm. Any electrical slurry pump used to pump out the sludge should be connected to RCCB.
13. At a time, maximum six person has to be allowed to work inside the tank.
14. Accumulate all the slurry in a bucket.
15. The bucket should be taken out by the person standing outside by the help of the rope.
16. The bucket weight should not exceed 5 Kgs.
17. Do not use 230 volts lighting inside the tank but instead battery or emergency lights can be used. 24 volts supply wherever available should be used.

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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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| **Amendment Record** | | | |
| **Revision date** | **Manual Section ref. and para** | **Brief details of revision** | **New Revision No.** |
| 12.07.2021 | **Confined space checks** | Point no 9 | 03 |
| 12.07.2021 | **Role of rescue team** | Point no 9, 12 | 03 |
| 15.07.2022 | **Work instructions for overhead tanks cleaning BF-1 & 2** | New hazard identified | 04 |