**WORK INSTRUCTIONS FOR PIG COOLING RECIRCULATION TANK**

**Criteria:** Safe handling of Hot Water

**Responsibility**: PCM In charge

**Identified Hazards:**

**Mechanical Hazard**

1. Contact with hot water
2. Contact with hot vapors
3. Slip/trip/fall of a person

**Significant aspect**

1. Generation of slurry
2. Generation of heat

Unauthorized operation or repair of any equipment is a punishable offence

**Filling of tank**

1. Bag House in charge at the start of shift should check tank level it should not be less than Half.

**2.** Before opening fresh water make up valve ensure that overhead tank level min.3.80 mtr.

3. Open motorized valve of freshwater line.

4. Close the valve once the tank is ¾ full.

5. Do not allow to overflow the tank, in case the tank is overflowing grab operator to be informed to remove the slurry from the primary tank to avoid wastage of water.

6. Check for any valve passing for addition of water in tank at least once in a shift.

7. Ensure that bag house pig cooling tank is also full and the addition/make up valves are in properly closed position.

8. Whenever pump is not in use ensure that the pump is stopped.

9. Two pond should be cleaned with the grab at least once (10 Bkts) during general shift hours by the grab operator.

10. Removed slurry from the two pond is to be stacked at the end of the two pond for drying (depending on weather conditions).

11. Raw material department in charge to be informed by production area in charge to shift this dried material to raw material yards and subsequently to sinter plant.

# RECIRCULATION TANKS CLEANING

**Criteria:** To Maintain PH/TSS level in water.

**Responsibility**: General shift Staff/ Bag House staff/ Slag Dryer staff.

**Identified Hazards**:

**Mechanical Hazard:**

1. Contact with hot water

2. Contact with hot fumes.

3. Contact with lime slurry

4. Fall of a person

5 Slippery area

**PROCEDURE:**

1. Person involved in this activity should wear gumboots -, Helmet, spectacle, Hand gloves.
2. There are three no. of pig cooling recirculation tanks, Tank no.1 & 2 are just next to slag granulation two pond known as settling tank. Tank no.3 at the side of granulation two pond, to which pumps are connected known as sump tank.
3. Pig cooling settling tank no.1, 2 to be cleaned every day with the help of grab crane and no. of grabs removed to be recorded in register/MIS. During cleaning of settling tank, Bag House staff should ensure that sump tank no.3 level is maintained by adding fresh water.
4. Pig cooling recirculation tank no.3 (sump tank) cleaned once in fifteen days.
5. This job is to be planned well in advance, tank level to be maintained low, overhead tanks to be kept full and all the tools required like ladder, hand shovels, powda to be kept ready.
6. Concerned in charge should ensure the Bag House sump tank is made full and pump checked for operation before cleaning of tank is undertaken, to take care of emergency situation.
7. Concerned in charge should take permit from PCM and Bag House in charge; ensure proper diversion of water into storm drain before commencing the activity. All concerned in the area of operation to be informed regarding the activity. Before draining the tank agitation is done inside the tank, with a 6 mt long GI pipe connected to a compressed air line for agitating the settled slurry inside the tank
8. Before putting manpower inside the tank, the pig cooling pump to be isolated by using LOTO locks, Block the main tunnel by putting plate near PCM1 discharge end. After draining if all the settled slurry is washed off then manpower will not be put inside for cleaning the tank. Fire hydrant water is also used to wash off the settled sludge inside the tank
9. Open the drain valve slowly, drain full water.
10. Concerned in charge should ensure that removal of sludge with the grab from lime two pond is in progress during the cleaning activity so that there is no hot water overflow from the two ponds into the recirculation tank.
11. Maximum slurry to be cleared through drain valve and thick slurry to be removed manually through drain valve by pushing towards drain valve.
12. After cleaning job is over area in charge should normalize the system by ensuring all manpower and tools used is removed out from tank and the drain valve is closed, remove LOTO lock of the pumps and take the tank in line. Clear the permit and inform concerned about completion of job.

**FLUSHING OF PUMP SUMP OF MAIN PIG COOLING TANK ONLINE.**

1. Person involved in this activity should wear safety shoe, Helmet, spectacle, Hand gloves.

2. This Activity is to be done in general shift daily under the supervision of PCM or area in charge

3. Open drain valve partially by the use of ‘F handle, staying at safe position.

4. The suction area of pumps inside the tank should be daily skimmed by means of a skimming pipe arrangement provided at the tank top towards the pump side and should be kept tied to the hand railing after use.

6. Slurry to be drained till discharge of clean water by ensuring water level of the tank.

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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: 10.07.2023** | **Date: 10.07.2023** | **Date: 10.07.2023** |

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