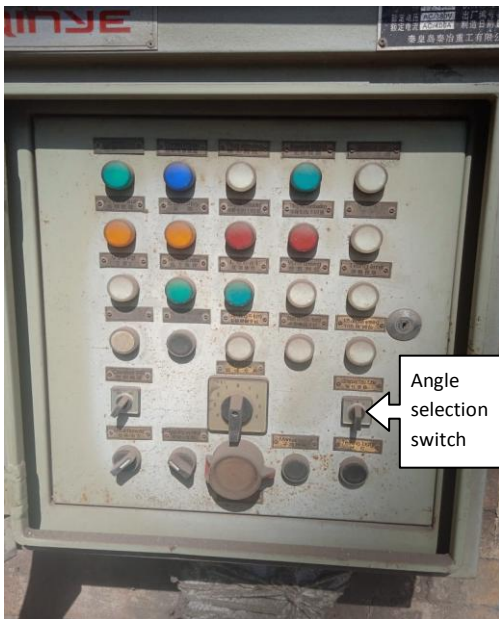


Report on best practices on Torpedo and Ladle transfer car at BSL.

- 1. Torpedo:** At BSL there are two numbers of torpedo pit. Each pit having a Hot metal transfer car(HMTC) moving below ground level. Both pit having two number of torpedo track. The HMTC move to torpedo track - 1 or 2 for discharging of hot metal from torpedo to Ladle.



Torpedo tilting is control from two places. One control post located near to torpedo track as LCP(local control post) other one located at certain height from ground level torpedo control room. From torpedo control room the operator see the hot metal level inside the torpedo as well as level of metal inside the ladle while discharging the torpedo.

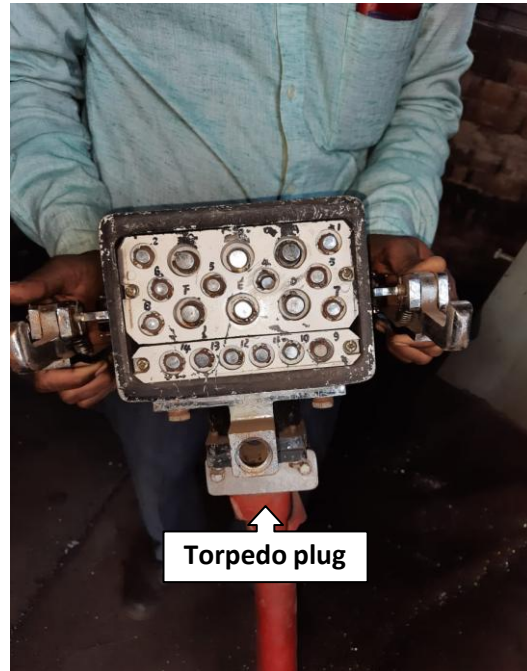


Local control post



Remote control post

They have a angel selection switch for tilting the torpedo. The selector switch is a spring return switch which is always place at 0° . when the operator tilting the torpedo, the selector switch should be select to 105° or 120° depending on requirement. If the selector switch is placed at 0° and operator giving the command torpedo cannot be tilted.



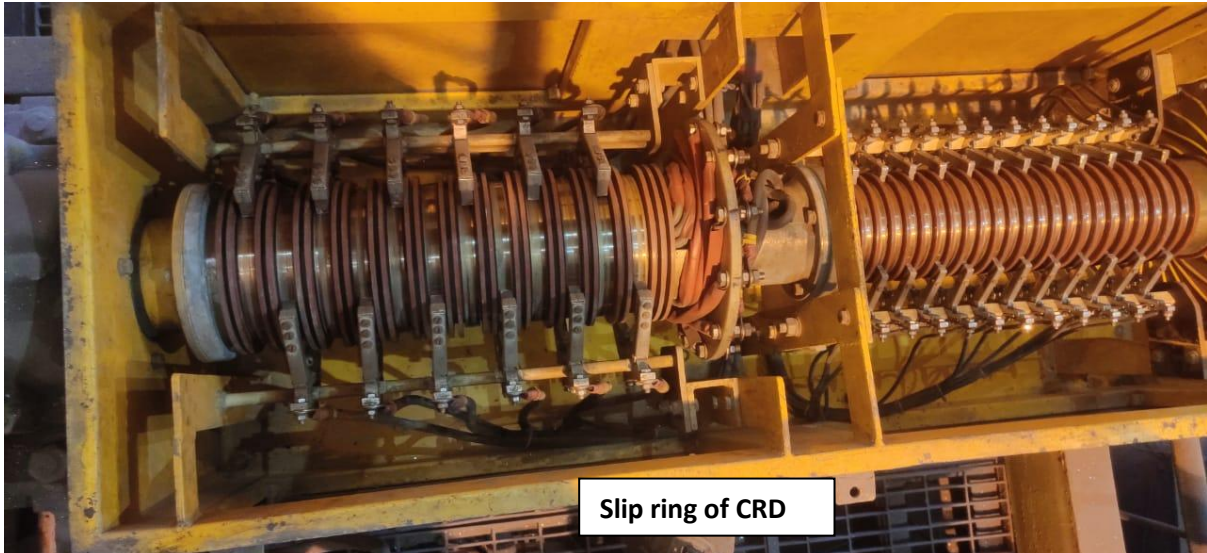
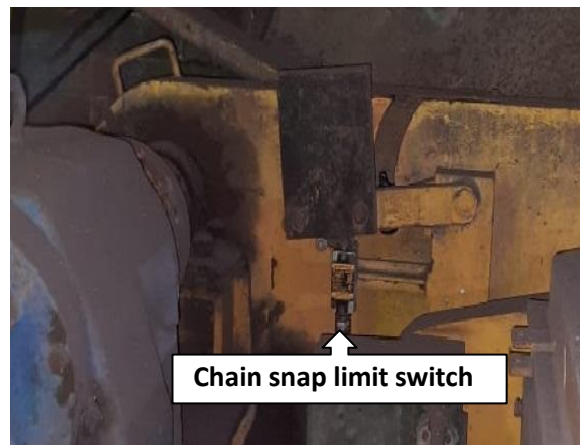
There remote control desk having a joystick which have a mechanical lock blue button. Without pressing the button joystick cannot be tilted forward or backward. They have two number of plug for a torpedo. One plug is used for onside and second one used for other side of torpedo. There is a plug selection switch at remote control desk. There are two VFD used for torpedo tilting placed in a single panel. The panel placed at the torpedo control room.



They have maintain a protocol that when the torpedo reach at torpedo pit, the loco operator sit at the torpedo control room until the torpedo fully discharge and the plug is remove from the torpedo.

2. Ladle Transfer Car:

Hot metal Transfer Car: There are two number of hot metal ladle car is used for handling hot metal discharge from torpedo. These car are located below the ground level. Each car having 4no's of motor. Two numbers of motor connected to each gear box placed at both side of the car. The power is feed to the car motor through CRD cable.



In their CRD system they used a chain snap limit switch. When chain snapped limit switch lever released and car will stop. Slip ring of CRD having collar arrangement, when slip rings move with CRD the collars guides the brushes.

Slag Transfer Car: In SMS-I the slag car having two motor, one motor connected to each side of gear box. Power feed to the car motor through CRD cable. The roller of the CRD cables are placed at certain height above the ground to protect from wear & tear and from hot slag fallen on the ground.



Slag car



Position of CRD



Rollers for CRD cable



Converter

Canopy
for CRD
cable

Rollers
for CRD
cable

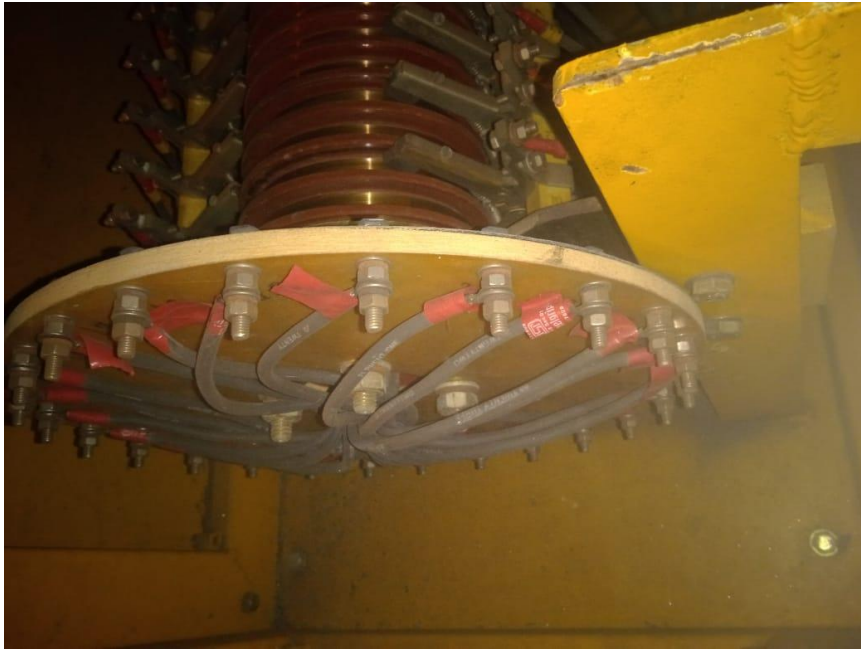
CRD cable roller arrangement below converter



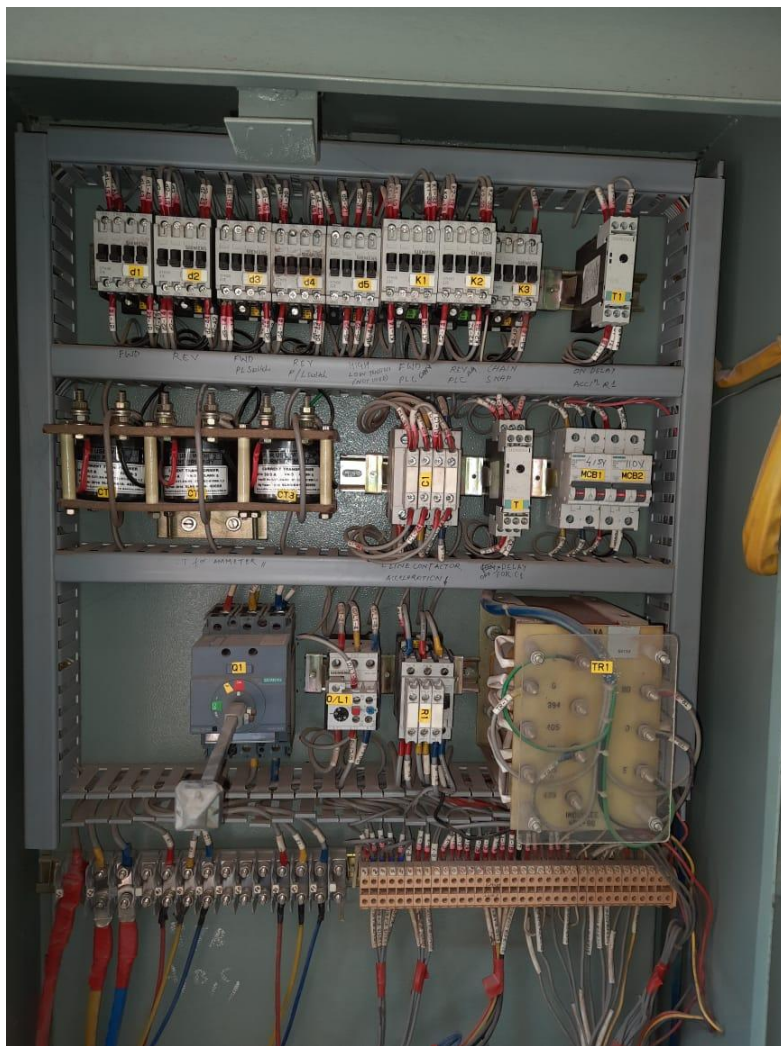
Converter

Roller

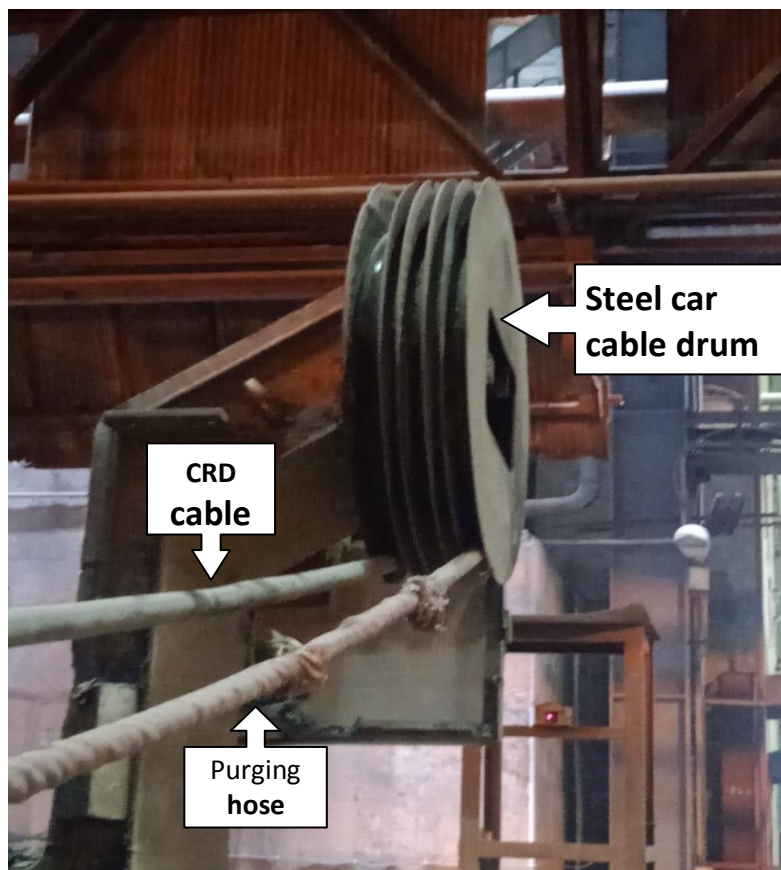
Roller



CRD cable connection at slip ring



CRD Panel

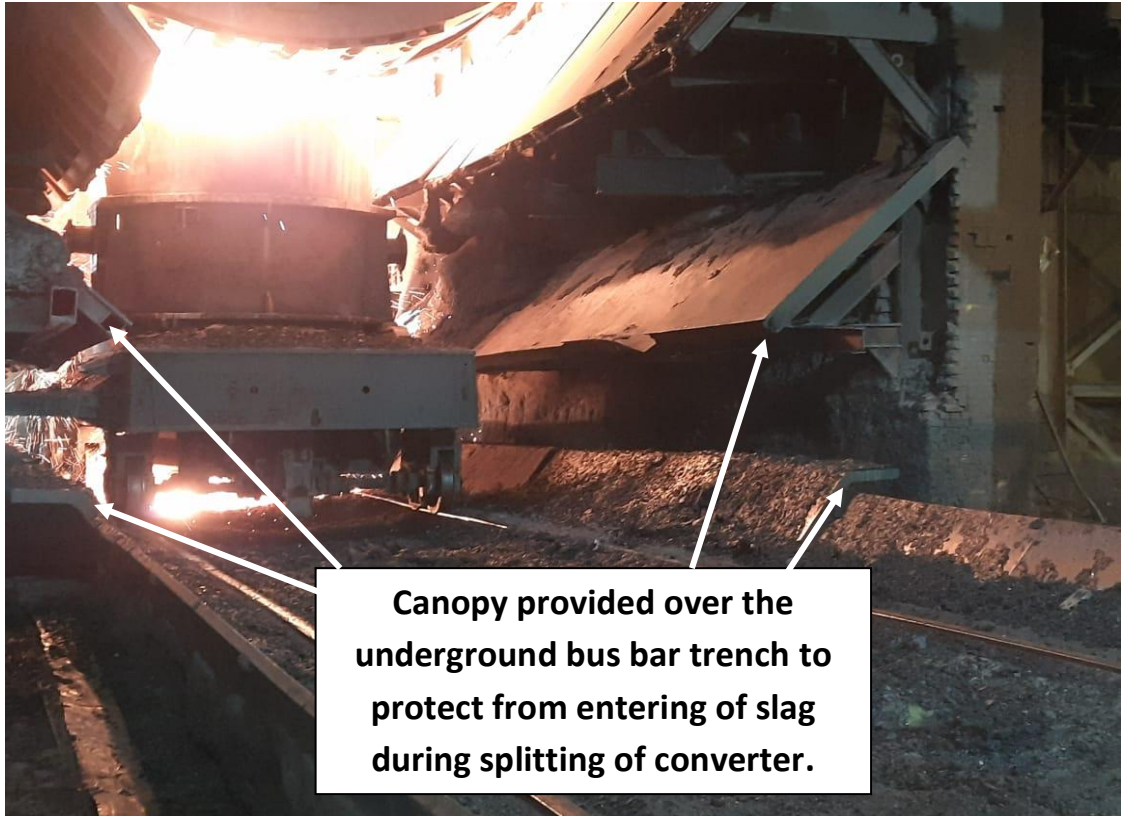


Steel Transfer Car: In SMS-I there are four numbers of motor used in steel car. Two motor connected to a gearbox placed at both side. Power feed to the car motor through CRD cable. The roller of the CRD cables are placed at certain height above the ground to protect from wear & tear and from hot slag fallen on the ground.

Steel and Slag Transfer Car: In SMS-II both the cars having 4 no's of motor. 2 no's of motor connected to a gearbox placed at both side of the car. Power feed to cars through underground bus bar system. There are two numbers of bus bar trench provided both side of the car track. One is used for steel car and other is used for slag car.



Underground bus bar arrangement for power feed to steel car and slag car



Canopy provided over the underground bus bar trench to protect from entering of slag during splitting of converter.



Steel car



Slag car

Thin metal strip is provided over the opening of trench of underground bus bar to protect from entering of foreign material.