

## **ANNEXURE - I**

### **SCOPE OF WORK:**

#### **1. Recovery of Metal from Skull, Furnace Slag and Ladle Slag, Sizing and Shifting of Recovered Metal, Sizing & Shifting of Shop Returns, excluding Universal Scrap.**

- 1.1** Loading & shifting of Skull, furnace Slag and ladle Slag scattered around CFFP's premises to processing area up to a distance of 1.5 Km. approx. one way. Tractor Trolley, Wheel Loader (0.5MT or above capacity), Articulated Crane (10MT or above capacity) & Tippers (15MT or above capacity) to be deployed.
- 1.2** Removal, Loading and shifting of Hot Slag (furnace Slag and ladle Slag) and Skull generated from Electric Arc Furnace and Slag tapped in Tapping Side and Pit Side within a distance of 1.5 Km approx. one way to processing area. Tractor Trolley, Wheel Loader (0.5MT or above capacity), Tippers (15MT or above capacity), Articulated Crane (10MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.
- 1.3** Loading and shifting of Returns/Off-Cuts of Forging, Casting and Machined items from Shops (Forge, Steel Foundry, light Foundry, machine Shop, Test Lab) to processing area within a distance of 1.5 Km approx. one way. Trailer/Truck (20MT or above capacity) to be deployed.
- 1.4** Loading and shifting of Refractory Debris from SMS Pit Side and Furnace Side to processing area within a distance of 1.5 km approx. one way. Tractor Trolley, Wheel Loader (0.5MT or above capacity), Truck/Trailer (20MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.
- 1.5** Processing & Segregating of Old-Accumulated Skull, furnace Slag and ladle Slag and Slag of each category (by digging, excavation etc.) for recovery of Metal and Sizing of Metal to chargeable size of 300 Kg maximum by single piece weight and each side not exceeding 350 mm. Processing and Sizing shall be by balling, gas cutting, lancing, screening or other suitable means as required for recovery of metal. Magnetic Crane (30MT and 70MT), Dozer (D155 or above capacity), Tippers (15MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.
- 1.6** Processing of Freshly-Generated Skull, furnace Slag and ladle Slag and Slag of each category for recovery of Metal and Sizing of Metal to chargeable size of 300 Kg maximum by single piece weight and each side not exceeding 350 mm. Processing and Sizing shall be by balling, gas cutting, lancing, screening or other suitable means as required for recovery of metal. Magnetic Crane (30MT and 70MT), Dozer (D155 or above capacity), Tippers (15MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.
- 1.7** Sizing of Returns/Off-Cuts to chargeable size i.e. 300 Kg maximum by single piece weight and each side not exceeding 350 mm. Oxygen Lancing auxiliaries are required.
- 1.8** Loading and transportation of Recovered & Sized Metal and Sized Returns as per clause 1.5 to 1.7 above to SMS Scrap bay or earmarked location after weighment at BHEL's weighbridge inside plant premises up to a distance of 1.5 Km approx one way. Magnetic Crane (30MT and 70MT), Tippers (15MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.
- 1.9** Loading and transportation of reasonably metal free residual and un-useful slag, if required, from processing site to facilitate space to receive

incoming scrap and slag for further processing, to an earmarked location upto a distance of 1.5 Km approx. one way. Dozer (D155 or above capacity), Tippers (15MT or above capacity) & Excavator (1CUM or above capacity) to be deployed.

- 1.10 Cutting by lancing operation at Medium & Heavy Forge Shop as and when required. Lancing slag cleaning & shifting from Medium & Heavy Forge Shop to an earmarked location upto a distance of 1.5 Km approx. one way. Oxygen Lancing auxiliaries & Tippers (15MT or above capacity), Wheel Loader (0.5MT or above capacity), Truck/Trailer (20MT or above capacity) to be deployed.
- 1.11 Removal of FES dust, loading, and shifting to earmarked location upto a distance of 1.5 Km. Dozer (D155 or above capacity) & Tippers (15MT or above capacity) to be deployed.

## **2. Processing of Universal Scrap (scattered around & current arisal) and rejected Cast Iron Mould.**

- 2.1 Loading & Shifting of existing universal scrap and cast iron mould scattered around CFFP's premises to processing area upto a distance of 1.5 Km approx one way. Articulated Crane (10MT or above capacity) & Tippers (15MT or above capacity) to be deployed.
- 2.2 Unloading of current arrivals of Universal Scrap at processing area from the Truck. Articulated Crane (10MT or above capacity) & Magnetic Crane (30MT & 70MT) to be deployed.
- 2.3 Sizing of Universal Scrap including pipe cutting by shearing to chargeable size i.e. 300 Kg maximum by single piece weight and each side not exceeding 250 mm. Gas Cutting auxiliaries are required & Shearing machine (Max 45mm dia. & Max 70mm dia.) to be deployed.
- 2.4 Processing of rejected cast iron mould to chargeable size of 300 Kg maximum by single piece weight and each side not exceeding 450 mm. Magnetic Crane (30MT & 70MT) to be deployed.
- 2.5 Loading and shifting of sized universal scrap and cast mould as per clause 2.3 & 2.4 to SMS Scrap bay or earmarked location after weighing inside plant premises, within a distance of 1.5 Km approx one way. Tippers (15MT or above capacity) & Magnetic Crane (30MT & 70MT) to be deployed.

## **3. Equipments/ Machinery required for the work.**

The contractor should deploy the suitable equipments which are required for successfully carrying out the work within the stipulated time. The contractor may deploy rental or owned equipments. If any equipment goes under major break down and not restored in 48 hrs, the contractor has to make his own stand-by arrangement for replacement, so that CFFP's production doesn't suffer. Contractor Scope includes deploying adequate number of experienced supervisors including Lancers, Riggers and all safety appliances & First Aid boxes. **Fuel, Oil, Lubricant and other Tools & Tackles etc. required for operation of required equipments is under contractors' scope.** Contractor is also required to remove old rejected Ingot Moulds and rejected ingots (Upto 130 MT) from shop and moving to the processing site as and when required.

#### **4. CFFPs scope:**

The following consumable items are under CFFPs scope:

- 4.1** Oxygen for lancing operation shall be supplied free of charge.
- 4.2** Lancing pipes shall be supplied free of charge.
- 4.3** Electricity, drinking water and industrial water for various uses shall also be available free of charge.

#### **5. Other Terms:**

- 5.1** The payment to the contractor shall be made only for the processed scrap received at SMS, CFFP. The contractor shall provide the processed scrap at SMS as per the production plan of SMS, CFFP.
- 5.2** Return scrap and processed slag shall be categorised as P1 and universal scrap received shall be categorised as P2.

**The contract shall be awarded on total cost basis to a single contractor for the complete work.**