**Sub :** Approval of the scheme for procurement of slip-ring induction motor based drive assemblies for 2 nos gyratory crushers at phase-1 CHP of Dudhichua project.

**1. Introduction to the scheme**

Dudhichua CHP with a design capacity of 10 MTPA dispatched 11.6 MT of coal last year. Present year target is even more ambitious at 13 MT.

Dudhichua CHP has three gyratory crushers of 1500 TPH each. Two units at phase-1 commissioned in the year 1992 and one unit at phase-2 commissioned in the year 2005.

Two older units at phase-1 are giving frequent starting troubles due to wear and tear and aging of critical structures. These starting troubles are eating up valuable operating hours.

To eliminate this problem, drive asseymblies of these two crushers need critical upgradation. Presenty installed drive asseymblies having 400kW squirrel cage induction motor (SQIM) need to be upgraded with a higher capacity drive assemblies having 480kW slip ring induction motor (SRIM).

**2. Need for the scheme**

The main identified reason behind the starting troubles are under-matched driving power (400 kW) and further power loss along the drive train at fluid coupling.

It has been noted that for the same capacity crusher (1500 TPH) at phase-2, a higher capacity drive assembly having 480kW slip-ring induction motor has been provided and it is running somoothly without any of starting troubles.

This sceme is for replicating the phase-2 drive configuration for phase-1 as well. Which invlolves procurement of 2 set of 480kW slip-ring motor based drive asseymblies with its electrical control panels and essential spares.

**3. Justification of the scheme**

Presenty average running hours per day for both crushers at phase-1 are about 15-16 hrs. With the proposed upgradation, the average running hours can be improved up to 18-19 hrs.

**4. Description and feature**

The proposed drive configuration uses a 480kW slip-ring induction motor. The higher power and high starting torque of slip-ring motors will be able to quickly start the crusher with any starting trouble.

In addition to elimination of the starting troubles with the proposed upgradation, the newer drive configuration has fewer parts, therefore, reduces points of failure as well.

**5. Capital investment**

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| --- | --- | --- | --- |
| Item | Qty | Rate | Amount |
| Drive unit for gyrator crusher with 480kW SQIM, soft starter, electrical panels essential spares with complete installation, commissioning and testing. | 2 nos | Rs. 2 cr | Rs. 4 cr |
| Service Tax | | | Rs. 0.72 cr |
| Total | | | Rs. 4.72 cr |

**6. Cost benefit analysis**