

PROBLEM SOLVING IN CRUSHER DRIVE AT NTPC-BADARPUR THROUGH FLUIDOMAT HFD COUPLINGS WITH BONUS OF ENERGY SAVING.

NTPC - Badarpur has 3 No of Coal Crusher with 360 KW - 1470 RPM motor drives. They were coupled through rotating body type Scoop Controlled Fluid Couplings type SCR-24 - size 26.

The client was facing following perennial problem with above SCR Coupling.

1. The automatic scoop tube control was malfunctioning and thus scoop tube was not going to 0% position while starting thus not giving desired fast decay of starting current.
2. Being a large diameter coupling of heavy mass, the operators were afraid of going near the coupling and thus avoided any observation for trouble shooting. In past one of the couplings had broken away and flown off causing heavy damage.
3. Due to coupling heavy mass and large diameter and difficulty of alignment (inherent to SCR coupling design) the vibration and noise levels were very high.
4. The coupling used a water cooled oil cooler and thus water supply had to be provided and pipe line etc for it to be maintained.

5. The couplings required frequent maintenance and incurred high cost of running with huge inventory of spares.

NTPC was looking for a solution to above problems with a simpler coupling requiring no maintenance. At the same time they did not want to make any alteration in existing base frame and not to shift the motor from its existing location.

Fluidomat studied the problems and the existing drive set up and offered the effective solution through their radially displaceable delayfil coupling model HFD-10B.

HFD-10B coupling was custom built to be accommodated in the existing large shaft to shaft distance of SCR coupling.

NTPC purchased one coupling and installed it on 12.6.99.

On running the coupling NTPC observed that :-

- ✘ Starting of motor is soft and starting current decays very fast.
- ✘ Acceleration of crusher is very smooth.
- ✘ Vibration and noise have come down substantially and within desired levels.
- ✘ The complicated and complex set up required for SCR coupling are eliminated. Water supply not required.
- ✘ The coupling is operator friendly and now they are not afraid of approaching near the coupling for observation.
- ✘ The coupling is very simple in design and needs much fewer spares. The operating cost is much lower.
- ✘ The coupling is radially displaceable thus ease of fitting and removal.
- ✘ The coupling is maintenance free.
- ✘ As a bonus NTPC got reduction in running current of motor from 32 A to 30A. Thus they got Energy saving of almost 6% which is substantial to pay back Fluidomat HFD-10B coupling cost in a short period.
- ✘ With success of HFD- 10B coupling, NTPC Badarpur removed remaining two SCR couplings and installed Fluidomat coupling which are in operation successfully.

It is suggested that the clients facing problem with SCR coupling may refer to us for solution.