

# **The Mangalore Pellet Plant**

## **A Mandate to Increase Production Capacity and improve Pellet Quality**

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### **Abstract**

In keeping with the mandate for improved quality and a production capacity increase to 3.5 mtpy, MET-CHEM / KIOCL conducted many modifications to maximize the availability of the system and improve indurating furnace performance. Key changes included :

- Improved quality and permeability using a double deck roll screen.
- A complete new high efficiency short flame burner system with relocated temperature sensors to optimize temperature profile.
- A philosophy of controlling bed depth using volume rather than weight of material to avoid a wavy profile in the machine.
- Optimizing of side layer to distribute more green pellets onto the machine for the same bed height and machine speed.
- A rehabilitated in-house pot grate testing facility to conduct tests on a regular basis to check feed properties.
- Decreasing the down time on account of disc plow wear.
- Avoidance of perennial choking in concentrate conveyors by innovative chute design. This was a first in the iron ore Industry.
- Installation of a captive power plant to avoid production delays due to power failures.
- Introduction of new DCS control system for optimizing the pelletizing process.
- With the above improvements, along with numerous other modifications, MET-CHEM / KIOCL has demonstrated that the Mangalore Pellet Plant capacity can be re-rated from 3.0 to 3.5 mtpy. This was demonstrated on three days production in March 1996 without the use of a double deck roller screen feeder (DDRS). With DDRS, the production rate shown was consistently high until Oct, 1996, but it is still too early to determine the extent of the increase in productivity. Furthermore, by increasing the gas flow with modifications to fans and material handling equipment, this Plant is capable of producing 4.0 mtpy.
- At present, MET-CHEM / KIOCL are working towards further improvements to capacity / productivity and quality of the product by fine-tuning the mixing, green balling, screening and induration stages.