



JSW Limited – Blast Furnace
Project Reference: C.6784

30th Jan 2011

Dear sirs,

Our comments below are given on the operation of Blast Furnaces in General and the JSW site Blast Furnaces in particular.

ALTERNATIVE TO THE TRT TECHNOLOGY:

The blast furnace operates under pressure varying from the bottom to the top. The pressure at the top of JSW Blast Furnace is around 2.5bar. The off process gases produced in the blast furnace are removed from the top of the blast furnace which is operating under positive pressure. Since these waste off gases contain substantial amount of dust, the gas has to be cleaned properly. Before the gas can be used it must be cleaned and the pressure reduced to the design pressure of the gas network.

In conventional Blast Furnace systems, the gases are cooled, cleaned for removal of particulates in a Gas Cleaning Plant (GCP) and the cleaned gas is used in the overall plant area as a fuel after mixing with available rich fuel gases at a nominal pressure of 800mmWC. In this configuration, the pressure energy of the off gases is dissipated in valves, wasting the pressure energy present in the gas. This leads to waste of energy and also wear & tear of the equipment.

In case of TRT, the pressure energy in the off gases produced from the blast furnace is converted into electrical energy by expanding the gas through a gas turbine. Thus without the TRT project, JSW would continue to lose the pressure energy inherent in the process off gases produced from the blast furnace. This TRT plant converts the pressure energy to electrical power and is the only process that we know of that has been adopted on Blast Furnace plants to utilize the pressure energy.

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OPERATIONAL LIFE TIME OF BLAST FURNACE:

The planning for the furnace was based on a furnace life of 20 years between major capital repairs. After this time we would expect the furnace internal lining to be replaced. The furnace ancillary equipment would be maintained through this campaign life and a significant proportion of the equipment would be repaired for a second 20 year period. Minor repairs would also be expected during the 20 years depending on the furnace operation and productivity. These periods are in line with actual results achieved in other plants around the world.

Yours faithfully

M G Eden

A handwritten signature in black ink, appearing to be "M G Eden", written over a large, stylized circular flourish.

P Bradbury

A handwritten signature in black ink, appearing to be "P Bradbury", written in a cursive style.

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