



Seminar

on

*Practical Training at
Suratgarh Super
Thermal Power Station*



Introduction

Ω Description of Thermal Power Station



Topics of Discussion



Turbine.



Boilers, SH, RH, ECR, APH.



CHP, AHP.

Turbine

There are three types of turbines HP,IP,LP operated at 3000 rpm with initial parameters 13 kg/cm².The superheated steam enters the HP turbine and strikes its blade hence **heat energy of steam is converted into mechanical energy**.The steam from HP turbine is reheated in re-heaters and reheated steam is sent to IP turbine through hot steam lines after working here the steam sent to LP turbine where it is ejected by vacuum ejectors and condensed.The direction of revolution of turbine is clock wise when looking at turbine from front bearings pedestal .

BOILERS

∞ The **boiler** is also termed as, '**steam generator**' is a container in which water can be fed and by the application of heat evaporated continuously into steam. The heat source is obtained by burning the fuel, which is coal. Water circulates in the water walls the heat energy is applied to the water walls and water converted into steam, this steam is fed into upper heaters to remove water particles to obtained superheated steam is fed into superheater where water particles is completely removed & finally fed to turbine.

SUPER HEATER

∞ Super heaters are meant to raise the temperature of steam above the saturation temperature by absorbing heat from flue gases, limiting the value the boiler is **540°C**. Super heaters eliminate the formation of condensate during the transporting of steam in pipe lines & inside the early stage of the turbine which is harmful for turbine blades.

REHEATER

∞ **Reheaters** are used to raise the temp. of steam from which point of the energy had been extracted in **HP turbine** with increasing no. of reheating stages. Reheating is continuing till temp. of steam raise up-to 540°C

ECONOMIZER

∞ The function of an **economizer** in a steam-Generating unit is to **absorb heat** from flue gases and add this as **sensible heat** to fed water before enters the evaporating ckt. Of the boilers. The coils of economizer is designed for horizontal placement which facilitates the draining of the coil & favours the second path of the boiler

AIR PREHEATER

∴ **Air preheater** is a heat exchanger in which air temp. raised by transferring heat from other fluid such as flue gases. Since air heater can be successfully employed to reclaim heat from flue gas at lower temp. level, thus heat ejected to chimney is reduced, hence boiler efficiency is increased

CRUSHER HOUSE PLANT

- ∞ A steel hopper has been provided in crusher house to receive coal & distribute it through manually operated rack & pinion gate to three vibrating screens of **675 t/hr** capacity each coal above 200mm size passes granular & discharged on to crushed conveyor belt .After that the coal crushed in bowlmill & convert into fine powder

ASH HANDLING PLANT

∞ The **ash handling** system provide for continuous collection of bottom ash from furnace hearth & its intermittent removal by hydro ejectors to a common slurry sump. Each boiler is provided with ash precipitator for collecting the fly ash from flues gases



Ω QUERRIES???

Ω THANKS