Why is draught important in a thermal power plant?

The draught is one of the most essential systems of the thermal power plant which supports the required quantity of air for combustion and removes the burnt products from the system. To move the air through the fuel bed and to produce a flow of hot gases through the boiler economizer,preheater and chimney require a difference of pressure.

What is draught in a steam boiler?

This difference of pressureto maintaining the constant flow of air and discharging the gases through the chimney to the atmosphere is known as draught. Draught can be achieved by the use of a chimney,fan,steam,air,jet,or a combination of these. Read also: What are the Different Types of Steam Boilers?

What is steam jet draught?

Steam jet draught: Steam jet is used for creating draught in the system. Mechanical draught: Fan or blower is used for creating draught in the system. Induced draught: The flue gas is sucked through the system by a fan or steam jet. Forced draught: The air is forced into the system by a blower or steam jet.

What is draught in a furnace?

To draw the combustion products through the system. To remove burnt products from the system. Draught is defined as the small pressure difference required between the fuel bed(furnace) and out side air to maintain constant flow of air and to discharge the gases through chimney to the atmosphere.

How does a forced draught system work?

In an induced draught system,the blower is installed near the base of the chimney and the burnt gases are sucked out of the boiler,reducing the pressure inside the boiler to less than atmospheric one. This induces fresh air to enter the furnace. In case of a forced draught system the blower is installed near the base of the boiler.

How does a natural draught system work?

The natural draught system employs a tall chimneyas shown in the figure. The chimney is a vertical tubular

masonry structure or reinforced concrete. It is formed to enclose a column of flue gases to produce the draught. It removes the gases high enough to prevent air pollution.

23. List the different types of components (or) systems used in steam (or) thermal power plant? 1. Coal handling system. 2. Ash handling system. 3. Boiler 4. Prime mover 5. Draught system. a. Induced Draught b. Forced Draught 24. What are the merits of thermal power plants? (Dec 2008) Merits (Advantages) of Thermal Power Plant: 1. The unit

STEAM POWER PLANT : COMBUSTION PROCESS - Download as a PDF or view online for free Forced Draught System 61 In a mechanical draught system, the draught is produced by a fan. In a forced draught system a blower or fan is installed near or at the base of the boiler to force the air through the cool bed and other passages through the furnace,

???Draught System:Natural draught- estimation of height of chimney, Maximum discharge, Condition, Forced, Induced and balanced draught, Power requirement by fans. ???Condensers and Cooling Towers:Types of condensers, sources of air Steam power plant

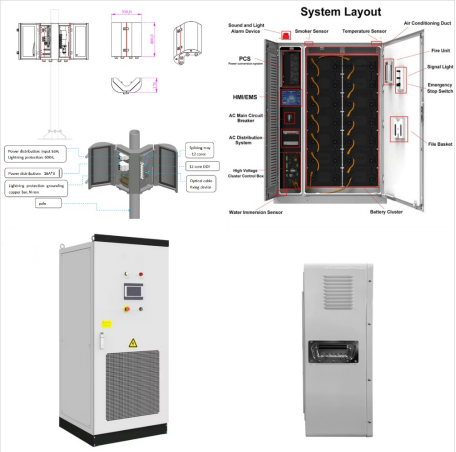
DRAUGHT SYSTEM IN STEAM POWER PLANT

The draught is required to force air through the fuel grate to aid in proper fuel combustion and to remove combustion products.. Fans are used to keep draughts at bay inside boilers.. Draught in Thermal Power Plants. Draught is defined as a small pressure difference between the fuel bed (furnace) and outside air required to maintain a constant flow of air and discharge gases to the ???

STEAM POWER PLANT / THERMAL POWER PLANT - Download as a PDF or view online for free Air And Gas Circuit 12 Air is blown to the combustion chamber by induced draught fan or forced draught fan or both. The dust present in the air is removed Any fault in the coal preparation unit may stop the entire steam generating system. 4) Excessive

Mechanical draught (forced draught is subtype of mechanical draught). The draught required in high capacity modern steam power plant may vary form 30 to 350 mm of water in order to maintain flow of large volume of air and gases (4x10 5 to 8 x10 5 m 3 /min). Also, large steam power plant is equipped with economizer and air preheater, the exit temperature of flue ???

DRAUGHT SYSTEM IN STEAM POWER PLANT



The function of draught system in thermal power plant is to extract the non combustible products after completely combustion happened in the boiler and then sent into atmosphere at safe elevation through chimney. Mountings of Steam Boiler :- The boiler mountings are the part of the boiler and are required for proper functioning. In accordanc

The blower is driven by steam or electricity. Air is forced to the furnace by forced fan and the flue gases are forced to chimney through economiser and air preheater. This system is known as positive draught system since the pressure of air and hot gases in this draught system are above atmospheric pressure.

The course contains the details of steam and gas thermal power plants, hydro power plants, nuclear power plants, along with solar, wind and geothermal energy power systems in addition to the direct energy conversion. The economics of power generation and the environmental aspect of power generation are also being addressed in this course.

DRAUGHT SYSTEM IN STEAM POWER PLANT

Today's steam power plants requiring 20 thousand tons of steam per hour would be impossible to run without the aid of draft fans. A chimney of a reasonable height would be incapable of This draught system is known as positive draught system or forced draught system because the pressure and air are forced to flow through the system.

Fuel and ash handling, draught system, Feed water treatment, Binary cycles and cogeneration systems. The rankine cycle used for steam power plant is shown in Fig. 2 and Fig 3 on P-V and T-S diagrams. The different processes of the Rankine cycle are described below: (1) The point ???d??? represents the water at condenser pressure P

Steam power plant:(1). Fuel handling unit. (2). Ash handling unit. (3). Boiler unit. (4). Feed water unit. (5). Cooling water unit. (6). Generator unit. (7). Turbine unit. ? The resistance to the flow air and flue gases which make the draught system necessary are; o Ducts, stacks, chimney, fuel beds, dampers, air preheaters, economizers

DRAUGHT SYSTEM IN STEAM POWER PLANT

4. Based on Draught System. Natural Draught; Mechanical Draught Forced Draught System; Induced Draught System; Balanced Draught System; There are two types of boilers are used in sub critical, super critical and ultra-super critical coal fired thermal power plant: Pulverized coal-fired Boiler; Fluidized Bed combustion (FBC) boiler

1. UNIT- I COAL BASED THERMAL POWER PLANTS Rankine cycle - improvisations, Layout of modern coal power plant, Super Critical Boilers, FBC Boilers, Turbines, Condensers, Steam & Heat rate, Subsystems of thermal power plants ??? Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and Cogeneration systems 1

Chapter Two steam power plant 2.04 - draught fundamentals ??? Definition draught is the small pressure difference which causes a flow of gas to take place. ??? Function in case of a boiler, draught is to : 1. Force air to the fire. 2. Carry ???

DRAUGHT SYSTEM IN STEAM POWER PLANT

1 al and ash handling plant: The coal is transported to the steam power station by road or rail and is stored in the coal storage plant.Storage of coal is primarily a matter of protection against coal strikes, failure of the transportation system and general coal shortages om the coal storage plant, coal is delivered to the coal handling plant where it is ???

Distributed control system in power plants-interlocks in boiler operation. Turbine control: Shell temperature control-steam pressure control ??? lubricant oil temperature control ??? cooling system. Nuclear power plant instrumentation: Piping and instrumentation diagram of different types of nuclear power plant,

combustion needs and draught system, cyclone furnace, design and construction, Dust collectors, cooling towers and heat rejection. Corrosion and feed water treatment. Steam Power Plant Combustion Process 3-31 II Internal Combustion Engine Plant Gas Turbine Plant 32-53 III Hydro Electric Power Plant

DRAUGHT SYSTEM IN STEAM POWER PLANT

An increase in the ambient temperature may cause a proportional increase in pressure of exhausted steam (??T = 14?C is usually a constant); hence the thermal efficiency of the power conversion system may decrease. In other words, the electrical output of a power plant may vary with ambient conditions, while the thermal power remains constant.

COAL BASED THERMAL POWER PLANTS Rankine cycle ??? improvisations, Layout of modern coal power plant, Super Critical Boilers, FBC Boilers, Turbines, Condensers, Steam & Heat rate, Subsystems of thermal power plants ??? Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and Cogeneration systems. UNIT II

Boiler draught is the pressure difference required to maintain constant flow of air into the furnace and to discharge the flue gases to the atmosphere through a chimney. Thus, boiler draught is ???

DRAUGHT SYSTEM IN STEAM POWER PLANT

An increase in the ambient temperature may cause a proportional increase in pressure of exhausted steam (??T = 14?C is usually a constant) hence the thermal efficiency of the power conversion system may decrease. In other words, the electrical output of a power plant may vary with ambient conditions, while the thermal power remains constant.

Classification of Boiler Draught: Natural, Artificial, Steam Jet and Mechanical. Draught may be defined as the small pressure difference which causes a flow of gas to take place. In case of a boiler the function of the draught is to force air to the fire and through a boiler furnace and flue, and to discharge the products of combustion to atmosphere via stack or chimney. Proper ???

Subsystems of thermal power plants ??? Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and Cogeneration systems. PART ???A Q.No Questions BT Level Competence 1. Describe the processes of Rankine Cycle. BTL 1 Remember 2. Design the layout of coal based thermal power plant. BTL 6 Create 3. Define steam rate and heat

DRAUGHT SYSTEM IN STEAM POWER PLANT

POWER PLANT ENGINEERING UNIT I - COAL BASED THERMAL POWER PLANTS Rankine cycle - improvisations, Layout of modern coal power plant, Super Critical Boilers, FBC Boilers, Turbines, Condensers, Steam & Heat rate, Subsystems of thermal power plants ??? Fuel and ash handling, Draught system, Feed water treatment. Binary Cycles and