

## **2.17 30272 POWER PLANT ENGINEERING**

### **UNIT-1 ENERGY RESOURCE AND THEIR AVAILABILITY:**

Types of power plants, selection of the plants, electrical safety

### **UNIT-2 SCHEMATIC ARRANGEMENTS OF HYDROELECTRIC POWER STATIONS:**

Constructions and operations of different components of Hydro-Electric power plants; comparison with other types of power plants

### **UNIT-3 STEAM FUNDAMENTALS:**

Schematic arrangements; choice of site; Efficiency of steam power plants; Equipment's Boilers & steam generators; boilers auxiliaries

### **UNIT-4 CONSTANT PRESSURE GAS TURBINE POWER PLANTS:**

Arrangements of combined plants; Steam & gas turbine power plants; Re powering system; with gas production from coal, organic fluids; parameters affecting thermodynamic efficiency of combined cycles

### **UNIT-5 PRINCIPLE OF NUCLEAR ENERGY:**

Basic nuclear reaction; Nuclear reaction fission theory; Steam supply; Operation and maintenance; Reactor safety; Cooling towers; Water treatment; Advantages and limitations; Waste disposal

### **UNIT-6 LOAD CURVE:**

Different terms and definitions; Cost of electrical energy; Tariffs methods of electrical engineering; Performance & operating characteristics of power plants: Incremental rate theory

### **Reference Books:**

1. Power Plant Engineering by SamsherGautam
2. Power Plant Engineering by Alok Gupta

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