**PLANNING, OPERATION AND MAINTENANCE OF POWER GENERATION PROJECTS**

**(THERMAL, HYDRO AND GAS BASED POWER PROJESCTS)**

**Duration: 6 Weeks**

**AIM**

Power generation and Transmission form the vital segment in the power supply chain to facilitate supply meeting the demand. Huge costs and high risks involved due to dealing with high voltages require cost effective procurements and safe, economical & efficient erection, operation & maintenance practices. Planning, execution and operation of generating and transmission systems, thus acquire highest significance in the extension of power supply of quality at affordable price at least losses. The course is designed to create necessary awareness.

**OBJECTIVE**

* Impart knowledge on operation & maintenance of thermal power generation systems.
* Orient the participants with the latest technologies, methods and equipment including IT and automation applications in thermal Power generation.
* Discuss about the commercial aspects of thermal power generation
* Energy auditing, accounting and conservation in thermal power generation

**CONTENTS OF THE COURSE**

**Introduction**

Electricity Act 2003, National Electricity Policy 2005 and its background,

Challenges in Electricity generations,

Overview of conventional power generation processes and recent renewable opportunities

**Planning of Power generation for Thermal, Hydro and Gas based Power Projects**

Load forecast on long term basis and arriving at annual energy and peak demands and fixing of LoLP (loss of load probability) and USE (un-served energy) targets using computer techniques, Fuel Linkages and its Issues

Comprehensive Generation Planning up to unit level considering limits fixed for LoLP

Power system studies relevant to alternative sites proposed and selecting the location of a power plant

**Erection and Commissioning and testing of Plants**

Salient features of Erection & Commissioning of Generating stations (Hydro, Thermal and Gas power plants including ultra-mega power projects and Power Plants operating on renewable energy sources) Preparation of Detailed Project Reports for generation projects

**Operation and Maintenance Practices of Power Plants**

Operation and maintenance aspects of Hydro, thermal, gas and Power Plants operating on renewable energy sources

**Performance and Efficiency issues**

Ways and means to improve plant load factor and efficiency

Renovation & Modernization of generating plants

Protection systems in generating stations

RLA and R&M of Power Plants

Energy Auditing in generating stations and reduction of auxiliary consumption

**General Management:**

Time Management Leadership, Procurement and Negotiations, Work life balance

**Field visits**

Thermal/Gas Power Generating stations