

Course Name: **Steam Turbine Control System and protection**

Code:

DATE:

Program Methodology:

Comprehensive Manual Power Point Presentations Self-Assessment questions

Who Should attend?

Operators especially Maintenance Engineers, Supervisors, Superintendents.

Course Outline:

Part 1

Control Systems - The Function of the Governors .

Understanding the full function of Governors.

The speed of driven equipment must be controlled.

Understanding when an increased load of the turbine slows the turbine what happens to the flyballs.

What happens when friction in the mechanism what takes place.

Operating Principles.

Overview of CBT 3D Video of Steam Turbine Governors.

Kingdom of Saudi Arabia

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P: +966133615552

Al Waha district.

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M: +966 505907654

Part 2

Steam Turbine Unit Controls - The main functions of modern steam turbine control systems are as follows we will note their functions.

Speed and acceleration control during start up.

Initialization of generator excitation Synchronization and application of load in response to local area generation dispatch commands.

Pressure control various forms inlet extraction back pressure etc. This control mode is initial pressure control. When a steam turbine is supplied by a heat recovery boiler the amount of steam generated can vary independently. Initial pressure governing allows the steam turbine to draw all the available steam out of the header while maintaining constant pressure. Unloading and securing of the turbine. Protection against serious hazards i.e. loss of lube oil pressure high exhaust temperature high bearing vibration. A single failure in the controls will not cause a shutdown. It will cause a diagnostic alarm and is repairable on-line.

Part 3

Understanding HAZOP/HAZID - every operator needs to know how to carry out a HAZOP. Analysis Participants will be given the opportunity to conduct a HAZOP Analysis. This will be followed by a question paper on Governors & Governor systems including other control systems.

Course Duration: (5) Day

Venue:

Time: Numbers of hours: Hours

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