Utilities Equipment: Steam Generator, Water Treatment And Storage Tanks

Introduction:

The Process Utility Systems training course will feature the importance and relevance of process utilities used in today industrial operations. It will familiarise the delegates with the various practices used for selection, operation and maintenance of various equipment used in process utilities. It will be demonstrated how these utility systems are efficiently integrated into oil and gas facilities. This BTS training course will also cover important practical aspects useful for engineers and operators in dealing with their basic utilities, including maintenance and troubleshooting of equipment and components.
Material presented in this training course will help the delegates to understand worldwide recommended guidelines and practises to be followed regarding the efficiency improvement, optimization and safety considerations. Several workshops with real practical examples will be selected to be solved as a team work. They will illustrate the concepts discussed and also provide delegates with necessary experience in applying them.

The course will feature:

- Knowledge for selection of different process plant utilities: steam, water, compressed air, refrigerants, inert gas, fuels, electricity and others
- Types of equipment used to run process plant with different utilities.
- Basic aspects of steam generation and distribution, water handling, compressed air utilization and other process utilities
- Different types of equipment used to run process plant with different utilities.

Who should attend?

This BTS training course will benefit all levels of personnel in a process plant environment. It will enable them to understand the design considerations, construction details and operational parameters associated with process heat exchangers.

This BTS training course is suitable to a wide range of electrical engineering professionals but will greatly benefit:

- Plant operators dealing with process utilities
- Maintenance Professionals
- Plant facility engineers
- Technical Managers
- Process Supervisors
- Inspection Personnel

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Course objectives:

By the end of this BTS training course, participants will be able to:

- Understand the operation and maintenance of main process plant utilities
- Analyse optimization of stem generation, utilization and distribution
- Evaluate parameters of water preparation systems
- Determine the correct selection criteria for compressed air systems
- Optimize the use of refrigeration, inert gas, fuel supply and electric systems

Course outline:

Day One: Steam Generation and Condensate Distribution Systems

- Steam operating characteristics: wet & superheated steam
- Industrial boilers and steam generators: operation & efficiency
- Steam distribution economy and optimization
- Steam traps utilization and efficiency
- Condensate recovery utilization
- Waste heat recovery and utilization
- Workshop: Examples and Solutions

Day Two: Water & Water Treatment

- Water utilization in process plants
- Water sources including waste water
- Requirements of industrial water treatment before its use.
- Chemical water treatment for boiler plants and steam generation
- Water cooling: open and closed systems
- Transport of water in pipes: pumps and pumping systems
- Workshop: Examples and Solutions

Day Three: Compressed Air Systems

- Compressed air used as process air and instrument air
- Process of air compression in compressors
- Types of compressors used in industrial utilities
- Inlet air filters and compressed air separators
- Basic elements of compressed air transport
- Operational, maintenance and safety aspects

- Workshop: Examples and Solutions

Day Four: Refrigeration and HVAC systems

- Refrigeration systems and their characteristics
- Compression and absorption systems characteristics
- Humidification and de-humidification equipment
- Cooling Towers
- HVAC systems
- Refrigeration methods used in industry: cryogenics
- Workshop: Examples and Solutions

Day Five: Other Utility systems

- Inert gas systems and nitrogen properties
- Inert gases, sources and methods of generation of nitrogen
- Fuels and fuel supply distribution systems
- Gas fuel operational and maintenance aspects
- Fuel oil piping and storage tanks
- Electrical systems, equipment and application
- Electricity utilization optimization