Facilities Engineering Training for Projects Personnel

Course general description:

Facilities Engineering Training for Projects Personnel is a critical component of preparing individuals involved in the design, construction, operation, and maintenance of industrial facilities such as oil and gas plants, refineries, power generation units, water treatment plants, and manufacturing facilities. Effective training ensures that project personnel understand the technical aspects of facilities engineering, safety protocols, and best practices to deliver projects on time, within budget, and to specification. This is a comprehensive overview of facilities engineering training, including its objectives, key topics, methods, and benefits.

Audience:

This course is designed for:

1. Mechanical projects & process engineers who are working in petrochemical and process industry
2. Design engineers from different disciplines
3. Projects managers
4. Projects planners
5. Projects engineers

Course objectives:

Upon the successful completion of this course, each participant will be familiar with the fundamentals of:

1. Facilities engineering historical background
2. Project definition
3. Topics related to facilities engineering from project point of view
4. Project stages from being an idea to establishing the facilities, commissioning and start up
5. Facilities engineering from operation point of view
6. Energy related topics
7. Safety related topics
8. Basic equipment, utilities & devices
9. Maintenance related topics

Course duration:

5 days

Course location:

Dubai

Course contents:

Day-1

- Pretest
- Introduction
- Project Initial evaluation
- Project execution sequence
- Cost impact vs project phase

- Activities and deliverables in each phase of project development
- Conceptual engineering phase
- Basic engineering phase
- Detailed Engineering phase
- Estimated costs
- Facilities design basis
- Definition of the main element of the project scope (what would be built)
- Definition of the project scope of work

Day-2

- Design contractor information
- Construction agency to effectively plan and execute the project
- Evaluation of probable process strategies
- Typical deliverables (FD, main equipment list, preliminary specification of process elements, preliminary risk considerations, uncertainty estimation of product quality, environmental impact estimation, operational philosophy)
- Preliminary layout
- Evaluation and preliminary sizing of pipeline, piping and process equipment
- Review of real case examples
- Review of real case examples
- Evaluation and identification of main construction elements

Day-3

- Preliminary sizing and Cost estimation
- Preliminary electrical power requirements
- Evaluation of power sources
- Power distribution strategy
- Identification of instrumentation and control requirements
- Evaluation of control strategies
- Identification of main instrumentation
- Safety requirements
- Environmental impact evaluation
- Review of operational philosophy

Day-4

- Global test definition
- Basic engineering (and FEED)
- Mechanical engineering
- Energy requirements
- Material specifications.
- Definition of tests for mechanical equipment
- Preliminary design of buildings, foundations and main structures
- Cost estimation
- Electrical power estimated consumptions

- Power generation/supply specifications

Day-5

- Energy distribution system specifications
- Main electrical equipment specifications
- Area classification definition
- Preliminary P&ID
- Control system specifications
- General specifications for instrumentation
- Specifications of data acquisition system
- Control valve preliminary sizing and specifications
- Alarm system philosophy
- Maintenance guidelines
- Posttest

Methodology:

- 50% lectures & concepts
- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEME040)