

Training Title

Plant Piping Systems: Operations, Maintenance and Repairs Training

Training Duration

5 days

Training Venue and Dates

Plant piping systems: operations, maintenance & repairs training		5	17-21 October	\$3,300	Dubai
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Training will be held at any of the 5 star hotels.
Exact venue will be informed later.

Training Fees

- 3300 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch

Training Certificate

Define Management Consultants Certificate of course completion will be issued to all attendees.

Who Should Attend

Process and Mechanical engineers who are involved with troubleshooting, selection, operation, and maintenance of large process machinery.

Entry level engineers all the way to senior engineers will benefit because of the course structure, the course targets engineers in the petrochemical, chemical, refining and power industries.

Description

Piping calculations, Control valves, actuators and pumps find extensive use in petrochemical process plants, water circulation systems, cooling and heating systems, and many other applications.

Keeping these equipment and machines running with least troubles and shutdown decreases the downtime of the whole system. Right control unit and machine selection appropriate to the right application, right machine operation and control, effective maintenance programs, reliable monitoring system, and skilled personnel capable of doing the right trouble shooting are essential requirements for prolong machine life. All the above can be achieved via deeper



understanding of the process piping, control valves and pumps construction and tolerances, the limits and constraints on their operation, and the more effective flow controlling methods.

This course will offer the opportunity to learn more about piping flow, control valves, actuators and pumps, their construction, operation, performance curves, control and troubleshooting. During the course participant's discussion, comments, bringing up their own problems are welcomed and encouraged. Short tests on the course material will be performed to examine the degree of delivering the right and quality of the presented material.

Course Objectives

- Familiarize the Attendees with different types of piping for process in Power systems
- Upgrading the knowledge of problems and solutions for piping flow and pumps
- Exercising examples of troubleshooting methods
- Exercising examples of control valves and piping
- Highlight the importance of pumps and fluid drives
- Highlight the importance of heat transfer in process piping

By Attending This Course You Will:

- Understand the characteristics of flow in process pipes
- Understand the characteristics of various control valves and actuator
- Learn how to choose the right control and pumps
- Learn how to read the performance curves of systems including pipes, valves and pumps
- Understand the limits on the pumps operation
- Learn the related standards

After Attending This Course You Will:

- Be more familiar with the different types of pipe flow
- Water Hammer in pipes
- Pipe lines support and insulation
- Be more familiar with the different types of control valves and actuators
- Be able to understand reasons behind choosing different types for different applications
- Be able to troubleshoot the problems and faults concerning these machines
- Be able to read and use the related international standards

Benefits of Attending This Course:

- Deepening your knowledge of process pipe flow , pumps and control valves
- Learns more about the problems and solutions for pumps
- Gain knowledge of parameters affecting pumps and control valves operations
- Learn methods of troubleshooting these pipelines ,valves and pumps
- Learn methods of controlling these pumps

Course Topics

- Flow in pipes
- Pressure drop and pipe fittings
- Material selection
- Velocity and heat transfer
- Thermal Insulation of pipes
- Pumping methods
- Centrifugal pumps
- Reciprocating pumps
- Rotary pumps
- Pumps performance curves
- Process Piping Design operating conditions
- Parameters affecting the pump performance
- The intersection of pump and system curves, operating point and Capacity control
- Specifications
 - Hydraulic Institute Standard
 - API standard
 - How to use standards for pumps selection
 - How standards differ from each other
 - How to use standards to write the right specification for pumps
- Properties of liquids being pumped
- Material selection ,Special applications ,Manufacturer data and curves
- Control Valves and actuators

- Valve Sizing and Selection
- Troubleshooting and Maintenance
- Cavitation in pumps
- Valves Problems ,Noise Attenuation Improving Valve Life and Operating Efficiency

Case Studies, Discussions, Last Day Review & Assessments will be carried out.

Training Instructor

Dr. Nasser Ahmed Zoghaib

Education

- **Doctor of Philosophy Degree (Ph. D) in the Optimization of Gas Pipeline Networks**" A new procedure for gas distribution was developed". – *Faculty of Mining & Petroleum Engineering at Suez-Egypt, 2004.*
- **Master Degree (M. Sc.) in the study of Gas Pipeline Fluid Mechanics**
"Two new gas pipeline equations were developed".
Faculty of Mining & Petroleum Engineering at Suez-Egypt, 1996.
- **Bachelor of Science (B. Sc.) at Mechanical Energy Section.**
Faculty of Engineering - Ain Shams University in Cairo-Egypt,
May 1985.

Professional experience ■ A) The Egyptian Natural Gas Co. (GASCO)

* **General Manager Ass. of Planning Studies of Gas Networks**
From 10/2003 till now.

* **Dept. Manager of Planning Studies of Gas Networks**
From 4/2003 till 10/2003.

1- Performing the reliability studies of gas supply sources and consumers and resultant network reliability.

- 2- Studying the inclusion of gas fields and consumers in the gas grid
(*connection points, route selection, pipe diameter, pipe thickness*).
- 2- Studying the expansion of gas fields and consumers and recommending the necessary actions of looping/compression and performing the relevant feasibility study on pipeline, gas compressor and gas turbine.
- 3- Studying future balance of supply and demand and the consequent Feasibility of construction of new pipelines / compressors.

* Operation Control Senior Coordinator From 7/1997 till 4/2003.

In the Operation Sector, which is responsible for the operation control of the National Gas Grid (NGG). This work includes

- 1- 1-Demand and supply estimate, matching & scheduling.
- 2- 2-Flow, Pressure & temperature control.
- 3- 3-Detecting possible leakage, equipment failure or condensate
- 4- formation.

■ B) Belayim Petroleum Co. (Petrobel)

--- During work in Petrobel, the main job was in Maintenance Sector but during periods of projects, I was assigned to Project Sector to work in Egypt and abroad in the project various phases such as: Basic and Detailed Engineering, Inspection, Expediting, Manuals Revision, Re-instatement, Testing, Commissioning and Start-up.

* Inspection Section Head From 1/1996 till 6/1997

In the Inspection Dept., that is responsible for the predictive maintenance activities such as vibration analysis of rotating equipment such as pumps, compressors and gas turbines and ultra-sonic thickness check of stationary equipment such as storage tanks, piping and vessels.

* Senior Mechanical Engineer From 1/1993 till 12/1995

In the Rotating Machinery Dept., that is involved in the maintenance and troubleshooting of pumps, compressors, gas turbines, internal combustion engines and relevant cost accounting & reliability studies.

* Mechanical Engineer From 1/1989 till 12/1992

In the Construction Dept. which is mainly involved in the piping works such as welding, filing , machiningetc

■ C) Misr-Iran Textile Co. (Miratex)

* Mechanical Engineer From 12/1986 till 01/ 1989

During this period , I was responsible for the maintenance & troubleshooting of hydraulic machines and rotating machinery

Papers and publications ☞ "New friction factor derived from study of Egyptian gas-field pipeline" Oil & Gas Journal, Nov. 10, 1997 Vol. 95, No. 45.

☞ "A Study on the Natural Gas Pipelines in Nile Delta Fields" - 13th International Petroleum Conference of Egyptian General Petroleum Corporation EGPC- September 1996 - Cairo, Egypt.

☞ "A Study on Abu Madi - Talkha Gas Pipeline in Nile Delta " - The Fifth International Conference on Petroleum, Mining & Metallurgical Engineering - February 1997 - Suez, Egypt.

☞ "Design & construction of gas pipelines in Egypt", Advances in Pipeline Technologies & Rehabilitation 99, Nov., 1999, Abu Dhabi, UAE.

☞ "Optimized Design & Operation of Gas Pipeline Networks", The 9th International Mining, Petroleum, and Metallurgical Engineering Conference (MPM), Feb., 2005, Cairo, Egypt.

☞ "Optimizing Gas Pipeline Networks", The 1st International Gas Conference & Exhibition, May, 2005, Homs, Syria.

☞ "Planning of Gas Pipeline Networks", The 6th Syrian-Egyptian Petroleum & Chemical Engineering Conference, November, 2005, Homs, Syria.

☞ "Euro-Egyptian Natural Gas Co-Operation: Challenges And Ambitions", North African Oil and Gas Summit 2006, September 18-20, 2006, Madrid, Spain.

☞ Authored some articles in PETROBEL & GASCO Magazines concerning Engineering & Management.

Professional memberships* Who's Who selected my biography for inclusion in the 14th & 19th Edition (1997-2002) of Who's Who in the World due to significant record of Achievement "as mentioned by it".

* Member in the American Society of Mechanical Engineers (ASME).

"Member # 2655801".

* Member in the Egyptian Society of Mechanical Engineers.

"Member # 1661".

Languages* Excellent command of *English Language* "written & spoken".

* Fair command of *German Language* "written & spoken".

* Fair command of *Italian Language* "spoken".

Acquired Skills* **Good command of computer skills.**

- * **Excellent skills at report writing.**
- * **Distinguished skills to prepare and give presentations.**
Appreciated in general for the following :
- * **Good communications skills.**
- * **Good managerial background and leadership.**
- * **Proactive mentality.**

Training

■ **Abroad Training.**

1. **"Maintenance Planning & Follow-Up", Agip Co., Italy, (June 1993).**
2. **"Operation & Maintenance of Gas Compressors ", Nuovo Pignone Co., Italy, (March 1997).**
3. **"General Control Room", Snam Co., Italy. (Nov. 1998).**
4. **"Workshop of Efficient Management of Pipeline Systems", LicEnergy Co., Abu Dhabi, UAE, October 1999.**
5. **"Workshop of Defect Assessment in Pipelines" IBC Co., Abu Dhabi, UAE, November 1999.**
6. **" Pipe & Piping Technology" , American Petroleum Institute (API) , USA, (July 2001)**
7. **"Strategic Management", Northeastern University, Boston, USA, (August 2006)**

■ **Local Training**

Technical:

- **Design & Construction of Piping System (AUC) - SCADA System (Enppi)- Gas Metering & Reduction Stations (Target).**
- **Pumps & Compressors Technology - Operation & Maint. of Gas Turbines- Vibration-based Predictive Maint. - Machinery vibration analysis Level 1&2 - Bearing Technology (SKF) -**
- **Radiographic Testing 1st & 2nd Level of American Society for Non-Destructive Testing (ASNT) - Wear of Machinery- Failure of Mech. Components- Non-Destructive Testing - Welding Metallurgy- Boilers-**

Safety & Loss Prevention.

Management: ISO 9000 series - Report Writing 1&2 - Problem Solving & Decision-making - Supervision (1st Level) - Presentation skills (American Champ)- # **Computer:** Auto Cad 1& 2 - 3D Max - Access - Power Point - Word - Excel- Harvard Graphics.

Trainer

- Preparation and training of some technical, management and computer courses at training centers in Egypt and abroad.
- Holding lectures and seminars on selected topics at Petroleum Department in Suez Canal and Al-Azhar universities.
- Clients include: GASCO (Abu Dhabi), Saudi Electricity Co. (SEC), Saudi Basic Industries Co. (SABIC), Elitfaq Iron Rolling Co. (KSA), Saudi Border Guards (KSA), Gasco (KSA), Bahraini Aluminum Co. (Bahrain), Syrian Gas Co. (SGC), Syrian Petroleum Co. (SPC), Furat Petroleum Co. (FPC) , Total France-Lybia, Air Liquide (Egypt), Petrobel, Gupco, Khalda, Bapetco, SOPC, NOC, Enppi, EGPC, EGAS, Abu Quir Fertilizersn (Egypt).....etc.
- **Some of the Trainings delivered:**

- * Gas Transportation
- * Piping Technology
- * Pipeline Design & Construction
- * Valve Sélection & Maintenance
- * Pump Maintenance & Troubleshooting
- * Diesel Maintenance & Operation
- * Rotating Machinery
- * Gas Turbine Operation & Maintenance
- * Bearing Technology
- * Gears & Gear Box
- * Machinery Alignment
- * Machinery Vibration
- * Pressure Vessel Design & Operation
- * Boiler Operations
- * Reliability & Maintenance Engineering
- * Maintenance Planning & Scheduling
- * Machinery Root Cause Failure Analysis (RCFA).
- * Maintenance Management
- * Packing & Mechanical Seal

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