

**Learning Topic: Technical (Plant Processes & Operations).**

**Course Name: Utilities (I) – Process Water, Fire Water, Cooling Water, Chilled Water, Chilled Brine Systems  
– Nitrogen, Plant Air, Instrument Air Systems**

**Reference Code: PLOP 124**

**Course Overview:**

This course is one of the basic training courses for any operation staff member.

This program is specially designed to teach the basics of utility systems in chemical, petrochemical, oil & gas plants. The program is in two parts.

Part I course will cover process (potable) water system, fire water system & network, cooling water system mainly cooling tower water, chilled water system using compressors, chilled brine system where cooling water temperatures could be as low as – 25 deg C.

Part I also includes plant air system where compressors are used with excessive cooling & drying, instrument air systems where some humidity could be tolerated, Nitrogen system.

Part II course will cover de-ionization (demineralization) of water which is a treatment aimed at upgrading its purity to be suitable for use in the process in the plant and for steam generation.

Part II also includes steam generation systems, condensate systems & cycles, hot water systems

All the information in these two programs are necessary and very important and basic for all operation and maintenance staff to be able to operate and maintain these services safely and efficiently.

**Course Objectives:**

**By the end of Utilities (I) program participants are expected to:**

1. Understand the Potable (Process) Water System serving the plants and the whole complex.
2. Understand the Fire Protection System distributed all through the fenced area.
3. Understand the Cooling (Tower) Water System, distribution and return
4. Understand the Chilled water & Chilled Brine Water Distribution and Return Systems
5. Understand the Nitrogen Distribution System.
6. Understand the Plant and Instrument Air System, generation and distribution.

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## Training Methodologies:

The training methodology is interactive and is suitable for all employees involved in maintenance and operations management enhancing the following:

- Pre-test and Post-test
- Variety of Learning Methods & examples
- Presentation
- Lectures
- Group Work

## Who should attend?

Operation engineers

Operations technicians

Operators

Maintenance technicians

Any interested plant personnel in maintenance, stores, warehouse, safety, procurement, logistics...etc.

## Training Outline:

### Day 1:

Course Introduction

Lesson 1: Potable Water System

Lesson 2: Fire Protection System

### Day 2:

Lesson 2: Fire Protection System

Lesson 3: Tower Water System

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**Day 3:**

Lesson 3: Tower Water System

Lesson 4: Chilled & Brine Water and Return Systems

**Day 4:**

Lesson 4: Chilled & Brine Water and Return Systems

Lesson 5: Nitrogen Distribution System

**Day 5:**

Lesson 6: Plant and Instrument Air System

Course Conclusion

**Duration: 5 Days**

**Venue:**

**Numbers of hours: 30 Hours**

**Time: 08:00 AM -02:00 PM**

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