

▲ Who should attend?

Engineers and technicians, who need to read Oil & Gas process schemes. Process, design & construction staff, equipment suppliers for Oil & Gas processing facilities, etc.

▲ Duration

2 days

▲ Dates & Location

March 27 to 28, 2008  
Rueil-Malmaison (Paris)

▲ Tuition Fees

€ 990

▲ Course Coordinator

Mohamed SKHIRI

Ref. PRO / SCHEM

# SCHEMATIZATION OF OIL & GAS PROCESSES

## - PFD, P&ID and Block Flow Diagrams -

### OBJECTIVES

To provide the technical knowledge of the Oil & Gas process schematization.

At completion of the course, participants:

- are able to distinguish between the different diagrams used in the Oil & Gas industry
- are able to read and analyze a PFD, a P&ID or a Block flow diagram
- know which type of diagram to consult in order to obtain specific required information
- communicate better with other teams from different disciplines, working on a process project

### COURSE CONTENT

#### DIFFERENT DIAGRAMS USED IN OIL AND GAS PROCESSING

0.25 day

Different types of diagrams used in the Oil and Gas industry:

- Process Flow diagrams (PFD)
- Piping & Instrumentation Diagram (P&ID)
- Block Flow Diagrams
- Plot Plan...

Symbolization: representation of the different pieces of equipment, the instrumentation...

**Illustration by examples of schemes corresponding to the same process unit**

#### DRAWING OF A PROCESS FLOW DIAGRAM

0.75 day

Drawing of a PFD starting from a written description of a crude oil stabilization and associated gases compression unit.

Reminder of the working principle of the main equipment: valves, separators, desalter, pumps, compressors, heat exchangers, ...

**Emphasis on the schematization mistakes to avoid:** inlet and outlet connections of each piece of equipment, tube side and shell side of heat exchangers, suction and discharge lines of rotating machinery, typical connection of compressors (gas cooler, scrubber, anti-surge line...), ...

Representation of the different control loops of the same oil stabilization and associated gases compression unit, starting from a written description.

Constitution of a simple control loop: sensor, transmitter, controller, control valve.

Representation of control loops.

Case of override and split-range control loops.

**Emphasis on the schematization mistakes to avoid:** Connection of sensors, positioning of control valves (inlet or outlet of capacities, suction or discharge or rotating machinery, inlet or outlet of heat exchangers, ...).

#### STUDY AND ANALYSIS OF A P&ID

0.75 day

##### Team work exercises

Analysis of a set of Process and Instrumentation Diagrams.

Identification of the different circuits: hydrocarbon, water, utilities, ...

Analysis of the instrumentation and process control.

Drawing of the process flow diagrams corresponding to the studied P&ID.

Presentation of the results of each team to the other groups.

#### DRAWING OF A BLOCK FLOW DIAGRAM

0.25 day

Drawing of the Block flow diagram corresponding to the previously studied P&ID.

Identification of the different connections between the blocks.

Analysis of the working principle of the whole process.

*This course is based on several case studies, based on common Oil & Gas processing facilities.*