



Training

in Multiphase Separation with gravity separators, scrubbers, and knock-out drums.

Course objective

To provide knowledge on the correct technology selection, design and operation of separators, and scrubbers.

Who should attend?

Engineers, operators, and technicians working on production units.

Upon completion of the course, participants will know the following:

- Typical upstream separation system design
- Separator, scrubber, and knock-out drums design and internals technology selection principle
- Familiarization with key project documentation for separator package
- Operation and control of separators
- Typical operational experiences and troubleshooting

Deliverables

- Training documentation
- Training execution
- Workshop participation

Location

Selected NOV training centers or client preference. Training can also be offered online.

Duration

2-3 days

Contact

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Training course includes

- Training by experienced technology personnel
- 2-3 days training for up to 10 trainees
- Hard and soft copies of training material in English

Course content

Welcome

- Safety moment
- Review of agenda
- Course objectives
- Introduction of participants and their expectations

General design considerations

- Upstream process system line-ups
- Operating conditions and their effect on separator design and performance
- Fluid chemistry, surface forces, and emulsions
- Basic equations relevant for design
- Level control
- Separators subject to motion
- Piping and nozzles
- Design practices

General design of vertical separators and scrubbers

- Type selection
- Conventional natural gas scrubber design

General design of horizontal production separators

- Type selection
- Conventional horizontal 2-phase or 3-phase separator design
- Design of Flare Knock-out Drum

Separator internals and their proper use

- Inlet devices
- Baffles
- Coalescers and agglomerators
- Mist elimination
- Vessel desanding
- Vortex breakers

Project specific equipment design or study case

- Design basis
- Process flow diagram
- Functional and physical description of equipment
- P&ID
- Vessel general arrangement drawing
- Internals general arrangement drawing
- Installation
- Operation and control
- Troubleshooting

Evaluations

- Q&A session
- Review – have the learning objectives been met
- Evaluation of course

