# Training

in CO<sub>2</sub> removal with hollow fiber membranes.

# **Course objective**

To provide technical knowledge of membrane  $CO_2$  removal, as well as an overview of the system, its operation (including start-up, shutdown, troubleshooting), and maintenance.

# Who should attend?

Engineers, operators, and technicians working on production units.

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

- Fundamentals of CO<sub>2</sub> membrane separation
- Details of the CO<sub>2</sub> membrane unit and pre-conditioning/conditioning operations
- CO<sub>2</sub> removal unit control and safety philosophy
- CO<sub>2</sub> removal unit key parameters
- Unit operation: start-up, shutdown, emergency shutdown, and troubleshooting
- Equipment maintenance and maintenance schedule for the main equipment

# Deliverables

- Training documentation
- Training execution
- Workshop participation

# Location

Selected NOV training centers or client preference. Preferably on site due to membranes unit vicinity. Training can also be offered online.

# Duration

3 days, depending on complexity.

# Contact

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# **Training course includes**

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



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# **Course content**

#### Welcome

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

### Overview

- Sweetening with membranes application practice and best available technology
- Evonik SEPURAN® NG membranes key characteristics
- Process design basis of the unit
- Review of process flow diagram and P&ID explanation
- Site visit or 3D model presentation

# Fabrication

- Fabrication
- Main specification applicable
- Material selection

## Control and safety philosophy

- · Process description and equipment key parameter
- Cause and effects chart
- Shutdown philosophy

#### Operation

- Start-up preparation
- Unit stabilization
- Troubleshooting

## Maintenance

- Maintenance of equipment
- Maintenance schedule
- Spare parts management

## **Evaluations**

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





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