# Training

in ToreTrap Desanding Hydrocyclone technology, operation, and maintenance.

#### **Course objective**

To provide technical knowledge of the ToreTrap Desanding Hydrocyclone enabling successful 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 cyclone separation
- Principles of cyclones and understanding their limits
- Optimal operation of main equipment
- How to monitoring performance of process
- Startup and shutdown
- Maintenance of main equipment

#### Deliverables

- Training documentation
- Training execution
- Workshop participation

#### Location

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

#### Duration

1 day

#### Contact

process-systems@nov.com

#### **Training course includes**

- Training by experienced technology personnel
- 1 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

#### Safety

• Understand how system and process changes may impact process safety

#### **Equipment description**

- Process design basis
- Understanding key process parameters and limits
- Understanding the limits on cyclone
- Correct handling of ceramics

#### System control

- Review of PFD
- Operational philosophy
- Turndown and number of liners

#### Sample analysis

- Sample points
- Sample methods used
- Sampling for performance monitoring

#### System performance monitoring

- Understanding pressure/flow relationship and its importance in operation
- Methods of checking performance
- Problems that can occur

#### Instrumentation

- Continuous level measurement with nucleonics
- Tuning forks and their envelopes of operation
- Sand and the effect on your separator levels

#### Maintenance and start-up and shutdown

- Maintenance plan
- Start-up and shutdown
- Spare parts management

#### **Evaluations**

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





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