



# Training

in Seawater Treatment Unit overview, operation, and maintenance.

## Course objective

To provide technical knowledge of the Seawater Treatment Unit 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 the Seawater Treatment System
- Optimal operation of main equipment
- How to monitor performance of process
- Startup and shutdown
- Equipment maintenance and maintenance schedule for the main equipment

## Deliverables

- Training documentation
- Training execution
- Workshop participation

## Location

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

## Duration

3 days

## Contact

[process-systems@nov.com](mailto:process-systems@nov.com)

## 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

## Course content

### Welcome

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

### Membrane separation process

- Filtration process and types
- Osmosis theory
- Nanofiltration
- Type of membranes

### Water feed specifications

- Typical water composition, temperature, and pressure
- Pre-treatment and chlorine
- Contamination

### Chemical products

- Chemical products
- Biocide
- Chlorine and oxygen scavenger
- Anti-scaling
- Polyelectrolyte (coagulant)
- Water quality
- Chemical dosing

### Equipment description

- Process design basis
- Filters, deaerator tower, air blower, and analyzers
- Membranes

### System control

- Operational philosophy
- Normal operation and equipment key parameter – process overview, filters, pumps, etc.

### Chemical analysis

- Sample points
- Analysis – free chlorine analysis, turbidity, iron content, oxygen, redox, sulphate, SDI, pH, and TDS

### SRU Performance monitoring

- Equipment overview dependent on fabrication schedule
- Opportunity with process intelligence

### Ultrafiltration membrane performance

- Assessing efficiency levels
- Critical operating parameters

### Membrane cleaning and preservation

- Cleaning sequence and frequency
- Preservation guidelines

### 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