VEOLIA

OIL & GAS

UltraMEV - Ultrafiltration
Upstream Oil & Gas

WATER TECHNOLOGIES

UltraMEV, Ultrafiltration

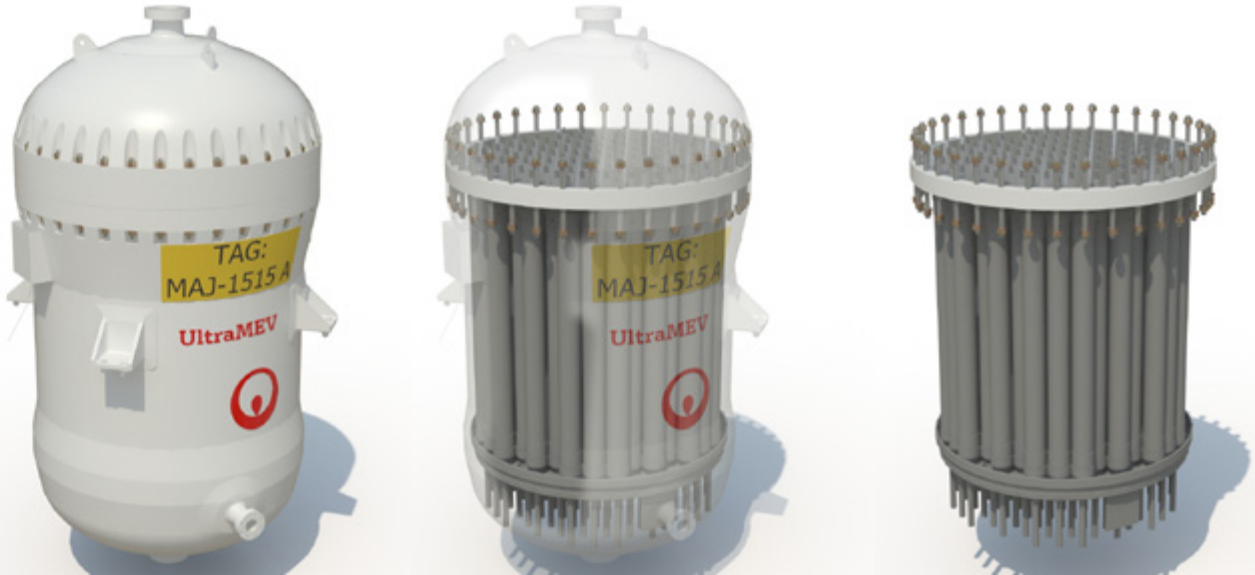
Veolia Water Technologies' market-leading innovation

From pioneering the use of membrane filtration offshore in typical single element housing rack assemblies, our solution has evolved through the development of the patented UltraMEV multi-element housing range. UltraMEV uses DuPont's proven ultrafiltration membrane technology to provide superior filtration in a space, weight, and cost-efficient design.

UltraMEV uses DuPont's 'out to in' polyvinylidene fluoride (PVDF) hollow fibre membrane technology that was chosen for its robustness and its compatibility with the most effective cleaning chemicals and processes. The membrane module used in the UltraMEV is the IntegraFlow OG50-1100 which incorporates Du Pont's XP fibre technology and has been specifically adapted for the UltraMEV from their IntegraFlux range. The membrane operates in 'dead-end' filtration mode avoiding the need for a continuous cross-flow velocity. The 0.03µm rating of the membrane ensures it captures the bulk of fine seawater particulates including bacteria and most viruses, and can achieve a filtrate SDI less-than 2.5.

BENEFITS

- Consistent high-quality filtrate with stable performance
  - 0.03 µm filtration - A barrier against most seawater particles
  - Robust easy to clean ultrafiltration (UF) membrane
- Compact and lightweight design
- Increased injection system uptime
  - Significant reduction in downstream SRP / Sea Water Reverse Osmosis (SWRO) plant CIP frequency
- OPEX savings
  - Expensive downstream cartridge filter stage not required
- Proven technology in the oil and gas industry



The UltraMEV is offered in two capacities, UltraMEV38 with an output of 150 m³/h , and UltraMEV108 with an output of 430 m³/h. The pressure resistant housings are designed for the requirements of offshore applications and have design lives of 30+ years. The vessels can be manufactured from GRP or metallic materials. The membrane modules are easily accessible through the removable top heads of the vessels.

During normal operation, coarse filtered feed seawater enters at the bottom of the UltraMEV vessel and flows upwards through the UF membrane elements flowing over the outside of the fibres. The filtrate passes through the wall of the fibres to the central bore where it flows upwards into the filtrate chamber at the top of the vessel from where it exits the UltraMEV to flow to the downstream process. The removed contaminants are retained on the outer surface of the fibres.

The UltraMEV plant is fully automatic including the cleaning sequences of SASFF (simultaneous air scour and forward flush) and CEB (Chemically Enhanced Backwash - sodium hypochlorite chemical solution), with operator intervention required only for the periodic membrane Clean-in-Place operation. The cleaning processes do not affect filtrate output and all cleaning effluents can be recovered and neutralised before disposal to minimise the environmental impact.

LICENCE TO OPERATE

- Guarantee compliance
- Health and safety
- Product compliant with oil and gas regulations

EFFICIENCY

- Reduce operating costs
- Guarantee performance
- Integrating best in class technology

YIELD

- Maximise productive uptime
- Increase production

BRAND CSR

- Delivering CSR objectives
- Environmental footprint reduction

Environmental and personal safety program

Our seven safety elements are:

1. Management commitment
2. Safety responsibility and accountability
3. Employee involvement
4. Hazard identification and control
5. Accident investigation and reporting
6. Training
7. Planning and evaluation

More than 178,000 global employees working in customer systems, safety and environmental stewardship are at the core of every activity Veolia Water Technology undertakes. Our goal is to conduct safe activities in a safe manner every day.

Resourcing the world

Veolia Water Technologies

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