

Selected References Equipment Retrofitting

Balder FPSO, Norway



Customer/End User: Vår Energi

Solution: 1st stage separator retrofit including vane inlet device with diffuser, slotted baffles and gas baffle, and vane demister.

Delivered: 2020

Balder FPSO, Norway

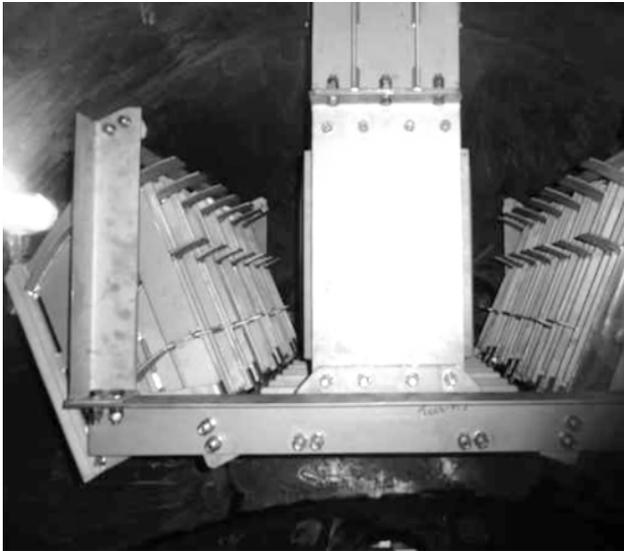


Customer/End User: AKSO/Vår Energi

Solution: Revamp of electrostatic coalescer internals, power units, and power entry bushings.

Delivered: 2018

Gullfaks A, Norway



Customer/End User: Equinor

Solution: Retrofit of inlet separators. Replacing malfunctioning inlet cyclones with vane inlet devices with diffuser banks and replacing damaged 18% NFA perforated baffles with 30% NFA slotted baffles.

Delivered: 2017

Goliat, Barents Sea



Customer/End User: Apply/Vår Energi

Solution: Retrofit of scrubbers and cooling medium expansion vessel.

Delivered: 2019

Selected References Equipment Retrofitting

Goliat, Barents Sea



Customer/End User: Apply/Vår Energi
Solution: Design and validation of new internals via VDM, supply of new internals.

Delivered: 2019

Jotun FPSO, Norway



Customer/End User: Worley/Vår Energi
Solution: Revamp of deoiling hydrocyclone liners, suction scrubber internals, separator internals and electrostatic coalescer internals, and power units.

Delivered: 2021

Wyth Farm, UK



Customer/End User: Perenco
Solution: New high-performance internals for separator vessel. New inlet device and slotted baffles replacing clogging perforated baffles.
Delivered: 2019

Ithaca FPF1, UK North Sea



Customer/End User: Petrofac/Ithaca
Solution: New high-performance internals for degasser vessel.

Delivered: 2019

Selected References Equipment Retrofitting

Nelson, North Sea



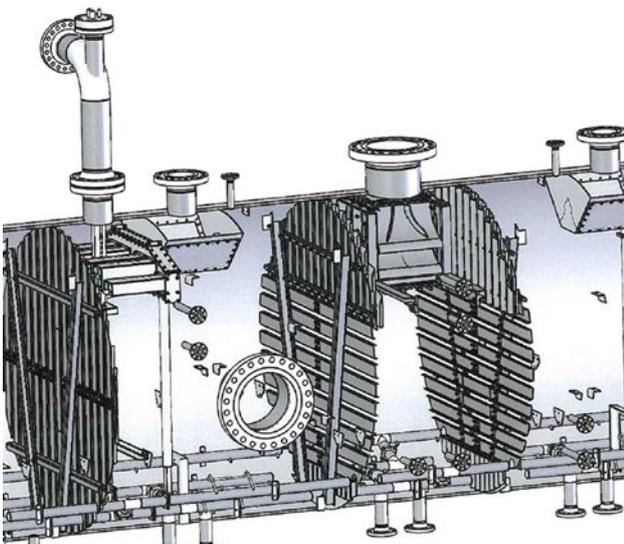
Customer/End User: Shell
Solution: Retrofit of production separator with modified ZPE inlet device.
Delivered: 2017

Montrose, UK North Sea



Customer/End User: Repsol Sinopec UK
Solution: Weir extension and vane pack blanking plates for 1st stage separator.
Delivered: 2021

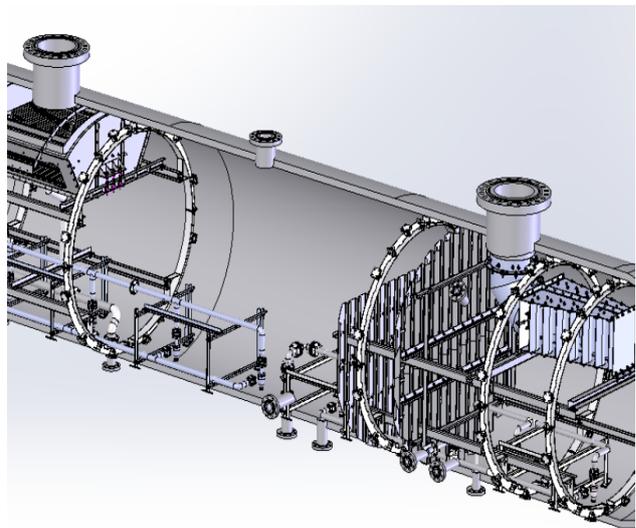
Terra Nova FPSO, Newfoundland



Customer/End User: Wood/Suncor
Solution: NOV supported end client and EPC through a fast-track technical concept study to evaluate and upgrade key equipment: Separators, scrubbers, glycol contactor, glycol flash, and regeneration system to meet the new design basis and new years in operation.

Delivered: 2020

Inde 23A platform, UK



Customer/End User: Perenco
Solution: Upgraded internal arrangement of slug catchers including vane inlet device, slotted baffles, Tore vessel desander system, vane pack demister, and internal water manifold. Enhanced separation, slug handling, and water treatment performance was targeted, combined with online solids removal capability.

Delivered: 2020

Selected References Equipment Retrofitting

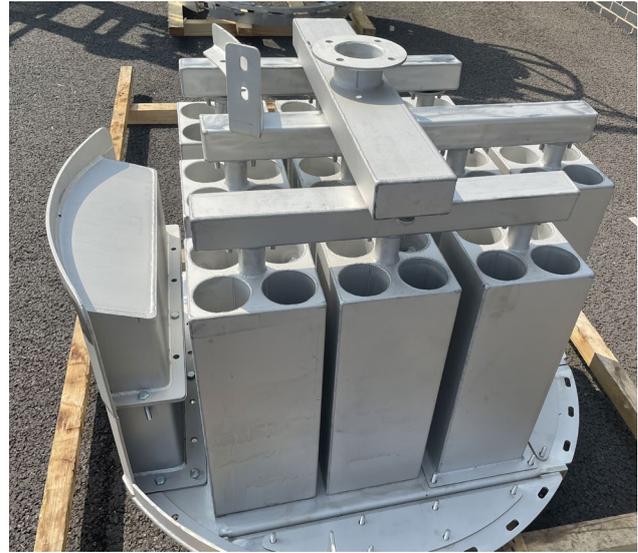
Alpine, Alaska



Customer/End User: Conoco Phillips
Solution: New high-performance internals for slug catcher vessel.

Delivered: 2019

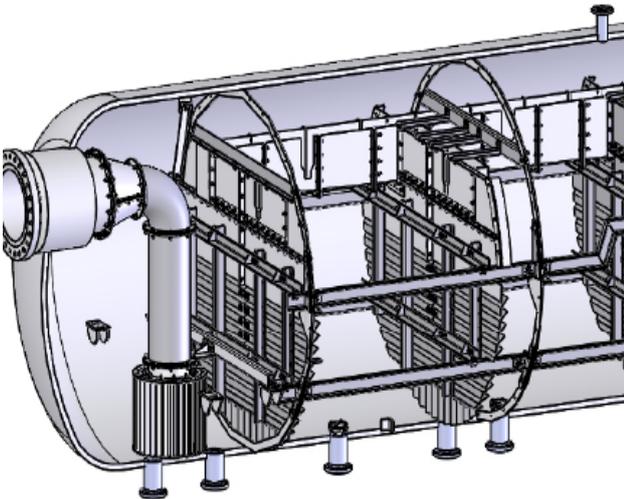
Delta House, Gulf of Mexico



Customer/End User: Murphy Oil
Solution: Design & supply of high-performance vessel internals to improve separation and remove liquid carryover in 1st stage scrubber vessel.

Delivered: 2021

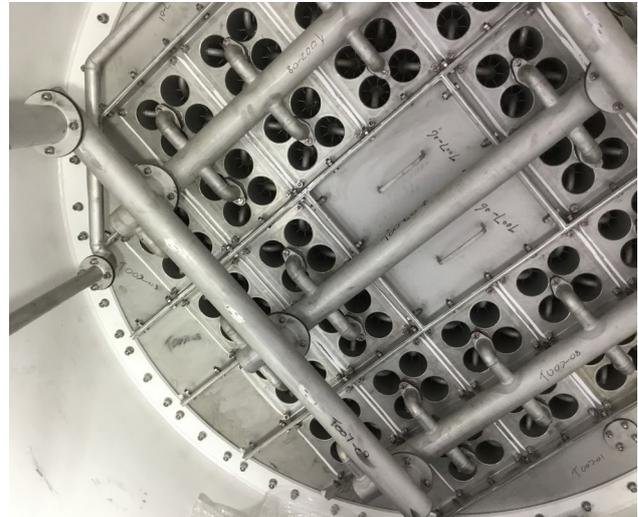
Atlantis, Gulf of Mexico



Customer/End User: Worley/BP
Solution: Conversion of existing LP separator vessel to NOV Advanced Horizontal Induced Gas Flotation Vessel (AHIGF).

Delivered: 2020

Bellevue/Jordan/Ruby Jo, Australia

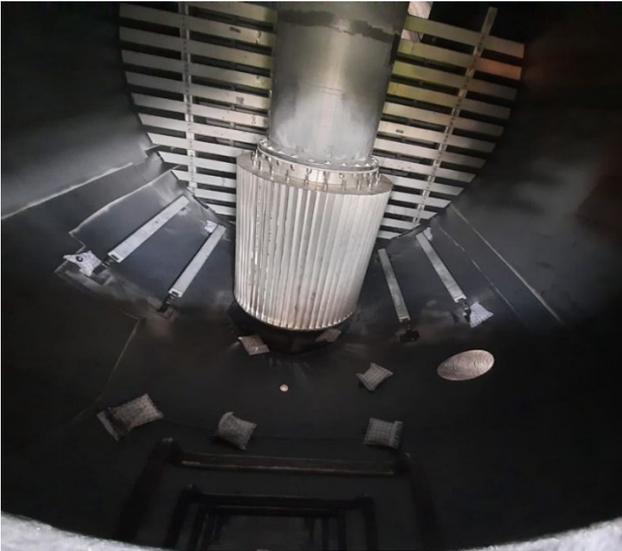


Customer/End User: QGC
Solution: Retrofit of 1st and 2nd stage suction scrubbers for onshore coal seam gas processing plant. Vessels were originally equipped with half-open pipe inlets and vane demisters, operating outside optimal conditions. The solution involved revamping vessel with new vane type inlet, surface protection baffle, mesh pad agglomerator, and a demisting cyclone deck. Gas processing capacity was increased by 40%.

Delivered: 2015-2017

Selected References Equipment Retrofitting

Rumaila, Iraq



Customer/End User: PEG/ROO

Solution: 370,000 BWPD produced water skimmer vessel with NOV Internals like ZSQ inlet device, ZVE baffle & coalescer plate pack.

Delivered: 2020

ADNOC Refining, UAE



Customer/End User: Samsung&CB&I/ADNOC

Solution: Two stage desalters upgraded with bushings, inlet distributor, electrode grids, and performed NOV in-house CFD analysis. Target of 535,000 BPD (132% of original design) crude throughput.

Delivered: 2020

Dukhan, Qatar



Customer/End User: QP

Solution: 7 existing separators upgraded with NOV internals like vane type inlet device, slotted baffles, coalescer plate packs, mist eliminators, and vortex breakers as part of Dukhan production facility upgrade to cater the forecasted production profile.

Delivered: 2018

Dukhan, Qatar



Customer/End User: DOPET/QP

Solution: 4 existing separators upgraded with NOV internals like vane type inlet device, slotted baffles, coalescer plate packs, mist eliminators, and vortex breakers as part of Dukhan production facility upgrade to cater the forecasted production profile.

Delivered: 2021