


PETRONAS


Ruby Field – FPSO Ruby II (Vietnam)

As part of this project, **Zeta-pdm Ltd** supplied the design, engineering and the supply of the new build separation internals for the six (6) off new separator vessels, the five (5) horizontal being the; **HP Slug Catcher V-1001**, **MP Separator V-1002**, **Ruby Slug Catcher V-4501**, **Degasser V-1003**, **Produced Water Degasser V-2003** and the vertical **Fuel Gas Scrubber V-4501**.

The Ruby Field is located in Blocks 01 & 02 offshore Vietnam and is approximately 155 km northeast of Vung Tau.

The owners of the Ruby field are operator Petronas Carigali Vietnam and PetroVietnam. The new floater FPSO Ruby II, will replace the FPSO Ruby Princess and is 244.8 metres long, 41.2 metres wide and weighs more than 100,000 tonnes, having a maximum storage capacity of 645,000 barrels.


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A NEW PHASE IN SEPARATION

 Certified by NQA to
 BS EN ISO 9001:2008

General Information;

Zeta-pdm worked closely with a Malaysian based "equipment package supplier" and Malaysian based marine heavy engineering provider, Malaysia Marine and Heavy Engineering (MMHE) for the design, engineering and supply of the production separation train.

The separation internals needed to be designed to minimise surface waves and sloshing effects (as they are situated on an FPSO).

We provided a detailed Computational Fluid Dynamics (CFD) analysis on the 3-phase MP Separator V-1002 and optimised all the designs, delivering on schedule whilst meeting stringent process, mechanical, HSE and quality specifications.

The scope included;
For the 3-phase MP Separator V-1002

- CFD Optimisation of the Separation Internals.
- 1 x ZP-4G® Inlet Cyclone.
- 1 x Double Perforated Distribution Baffle.
- 2 x Single Perforated Calming Baffles.
- 1 x Partial Single Perforated Calming Baffle over the Weir Plate.
- 1 x Mesh Type Demising Device.
- Set Longitudinal Motion Strips.

For the 2-phase HP Slug Catcher V-1001, Degasser V-1003 & Ruby Slug Catcher V-1005

- 2 x ZP-4G® Inlet Cyclones.
- 1 x Single Perforated Distribution Baffle.
- Set x Single Perforated Calming Baffles (3, 1 & 1 respectively).
- 1 x Mesh Type Demising Device.
- Set Longitudinal Motion Strips.

For the Produced Water Degasser V-2003

- 1 x ZSQ® Inlet Device.
- 1 x ZSB / ZPC Straightening Baffle.
- 1 x Single Perforated Calming Baffle.
- 1 x ZPC Ultra-Skimming Zone.
- Set Longitudinal Motion Strips.

For the Fuel Gas Scrubber V-4501

- 1 x Half Open Pipe Inlet Device.
- 1 x Mesh Type Demising Device.

Vessel Principal Dimensions;

HP Slug Catcher V-1001
 4,200 mm ID x 15,000 mm T/T

MP Separator V-1002
 2,896 mm ID x 10,500 mm T/T

Ruby Slug Catcher V-1005
 2,896 mm ID x 7,000 mm T/T

Degasser Vessel V-1003
 2,032 mm ID x 6,096 mm T/T

Produced Water Degasser V-2003
 1,829 mm ID x 5,334 mm T/T

Fuel Gas Scrubber V-4501
 776 mm ID x 2,670 mm T/T