

Buzios Field - Subsea & Topside HPU & Control Racks **proserv**

Client:

Seatrium

Location:

Buzios Field, Offshore Brazil

Equipment:

Subsea & Topside HPUs & Control Racks

Project Background

Seatrium were contracted by Petrobras to build the P-80 & P-83 FPSOs for the Buzios Field, Offshore Brazil. Buzios is an extensive gas field, which is one of the largest in the region, with numerous floaters already in operation. Building on a successful track record supplying control systems for the P-74 and P-75 FPSOs, Proserv was selected to deliver complete Topside and Subsea Control Systems for both vessels.

The Challenge

The project required:

- High-reliability hydraulic control systems capable of supporting a large number of subsea wells and topside valves
- Redundancy and safety-critical design to meet Petrobras' operational requirements
- Compliance with Brazilian regulations and third-party classification standards
- A solution scalable across two identical FPSOs, ensuring consistency and operational efficiency

The Solution

Proserv delivered Topside Controls to provide hydraulic power to 23 off subsea wells and 135 off Topside valves for each FPSO. The solution included Subsea HPUs with external accumulator skids, Topside HPUs and Subsea and Topside Control Racks.

Scope of Supply

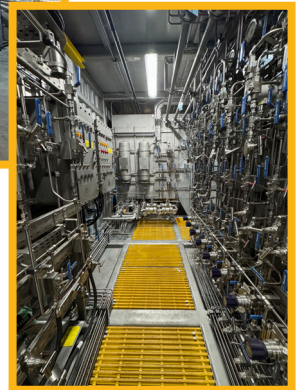
- 2 x Subsea HPUs
- 2 x Topside HPUs
- 2 x Accumulator Skids
- 4 x Subsea Control Racks
- 14 x Topside Control Racks
- Full system hydraulic analysis
- ABS design approval and surveillance activities
- Special tools (slings, spreader beams, nitrogen booster pumps)
- Commissioning spares
- Operation and maintenance training for end user

Technical Highlights

Subsea HPU Design



Subsea HPU



- 4000 l supply reservoir
- 4000 l return reservoir
- 7 barg recirculation system with redundant motor pumps, redundant filters and motorised ball valves for PLC control
- 379 barg LP system with 2 x air pumps (duty / standby), 4 x motor pumps (duty / standby pairs), 14 x 50 l accumulators / backup bottles, redundant filters, 22 x outputs including redundant regulators and ESD solenoid valves

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- 759 barg HP system with 2 x air pumps (duty / standby), 8 x 50 l accumulators / backup bottles, redundant filters, 18 x outputs including redundant regulators and ESD solenoid valves
- MCCs with integral LCP for manual control
- PLC with integral HMI, control logic and purge system
- Structure - 15.75m x 2.7m x 3.4m, 38t MGW (dry), designed for 0.15 barg blast load, 316 l stainless steel
- ABS third-party approval
- Compliance with local regulations, such as NR10, NR13 and INMETRO

Topside HPU Design

- 2900 l supply reservoir
- 5800 l return reservoir
- 7 barg recirculation system with 1 x motor pump, redundant filters and motorised ball valves for PLC control
- 352 barg LP system with #2500 pipework, 2 x air pumps (duty / standby), 2 x motor pumps (duty / standby), 38 x 50 l accumulators / backup bottles, redundant filters, redundant regulators and 5 x outputs to 7 x Topside Control Racks
- MCCs with integral LCP for manual control
- PLC with integral HMI, control logic and purge system
- Structure - 10.2m x 3m x 3.85m, 36t MGW (dry), designed for 0.15 barg blast load, 316 l stainless steel
- ABS third-party approval
- Compliance with local regulations, such as NR10, NR13 and INMETRO



Topside HPU

Rack Designs

- Subsea SESDV Control Rack - 379 barg LP system complete with hydraulic filtration, 4 x outputs for SESDV supplies, ESD solenoid valves on each output, Supply and Return PTs, externally mounted JBs for analog and digital signals
- Subsea Well Control Rack - 379 barg LP system complete with hydraulic filtration, 2 x outputs for BSDL & TUSDL supplies, ESD valves on each output, Supply and Return PTs, externally mounted JBs for analog and digital signals
- Topside Control Racks - 113 barg LP system, 7 x different designs with varying numbers of outputs depending on quantity of downstream Topside valves, ESD valves on each output, Supply and Return PTs, externally mounted JBs for analog and digital signals
- All units designed for 0.15 barg blast load
- 316 l stainless steel frames with varying envelope sizes depending on number of outputs
- ABS third-party approval
- Compliance with local regulations, such as NR10, NR13 and INMETRO



Topside Rack

Conclusion

By combining deep subsea controls expertise with a strong understanding of Petrobras' operational and regulatory requirements, Proserv successfully delivered robust, compliant and high-performance control systems for the P-80 and P-83 FPSOs. This project reinforces Proserv's position as a trusted partner for complex FPSO control system projects in Brazil and beyond.