

# Flushing and re-commissioning of fire pump hydraulic drive system

**ASSET** Floating Production, Storage and Offloading (FPSO) unit  
**LOCATION** UK

Troubleshooting and repair services from experts are crucial when equipment fails and it is needed back in operation

**BENEFITS**

Expert advice to help repair existing equipment

Return of fire pump to full service, with assured hydraulic system cleanliness

Root cause of historical problems identified and rectified



## CHALLENGE

Our client had been experiencing operational issues with the hydraulic drive system for the forward starboard fire pump on board their FPSO. Testing of the fire pump system had highlighted that hydraulic drive system performance was below specification, and when the system was operating under load, the hydraulic boost pressure would drop, causing the system to shut down.

These problems culminated in the catastrophic failure of the hydraulic pump, causing the hydraulic system to be contaminated with metallic debris. Our client engaged us to carry out system flushing, hydraulic pump and motor refurbishment, assistance in the root cause analysis, and commissioning and testing which allowed the fire pump system to be returned to service.

## SOLUTION

- Two hydraulic technicians were mobilised to the FPSO with diagnostic and oil sampling equipment to carry out testing on the fire pump system.
  - High internal leakage in the hydraulic pump was identified as the reason for the drop in performance whilst debris was found in the hydraulic transmission lines.
  - The hydraulic pump and motor were replaced and the system pipework was flushed to clean out the hydraulic reservoir which took 10 days.
  - Commissioning and testing were carried out.
- When the main hydraulic pump later failed and led to the contamination and debris throughout the hydraulic system, Sparrows Group were contracted to assist with the root cause analysis.
  - The root cause was found to be a control system problem which had been present since the system was originally installed
  - With the control issues rectified the system was flushed, commissioned and tested, and successfully returned to service.

## SUMMARY

- Hydraulic system flushing – supplied flushing units, filter skids, inter-connecting hoses and oil sample analysis equipment
- Hydraulic system diagnostics, troubleshooting and commissioning – supplied diagnostic equipment i.e. flow meters, pressure gauges, data logger
- Hydraulic engineering – work scope planning, procedures, technical support and assistance with root cause analysis

1.



2.



1.

Hydraulic transmission pump

2.

Fire pump and hydraulic drive motor

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