

SKY -FUTURES

INSPECTION OF FSO TANKS CASE STUDY

BW OFFSHORE SAVED 51 DAYS



Client at a glance

BW Offshore is a global owner and operator of floating production storage and offloading (FPSO) vessels.

The company also participates in developing proven offshore hydrocarbon reservoirs. BW Offshore is represented in all major oil & gas regions worldwide with a fleet of 15 owned FPSOs. The company has more than 30 years of production track record, having executed 40 FPSO and FSO projects.

www.bwoffshore.com

BW Offshore, a leading provider of floating production services to the oil and gas industry, required the General Visual Inspection (GVI) and Close Visual Inspection (CVI) of 20 tanks (18 Crude Oil Tanks and 2 Slop tanks).

Using the collision-tolerant Elios drone, Sky-Futures provided them with a safer, faster inspection method and a greater quantity and quality of image data than they had previously been able to gather using rope access or scaffolding.

www.sky-futures.com



CUSTOMER NEEDS

At 25 meters above ground, in pitch-black conditions, these inspections traditionally require humans to enter the confined space of tanks with the aid of scaffolding, rope access or filling the tank with water and floating a dingy, making inspections risky, costly and time-consuming.

Typically, this type of inspection would have taken 3 days of inspection per tank (including open, purge, make safe, setup, inspect, close). Due to the condition of the tanks and the fact that the vessel was laid up, the inspection would have involved a team of 6 people including the need for breathing apparatus, on-hand tank rescue, tank sentry and rope access team under hot conditions of offshore Indonesia.

Motivated by the potential gain relative to the rapidity of execution but as well the benefit of not having to send people inside the tanks to do the job, BW Offshore requested the assistance of Sky-Futures' inspection team.

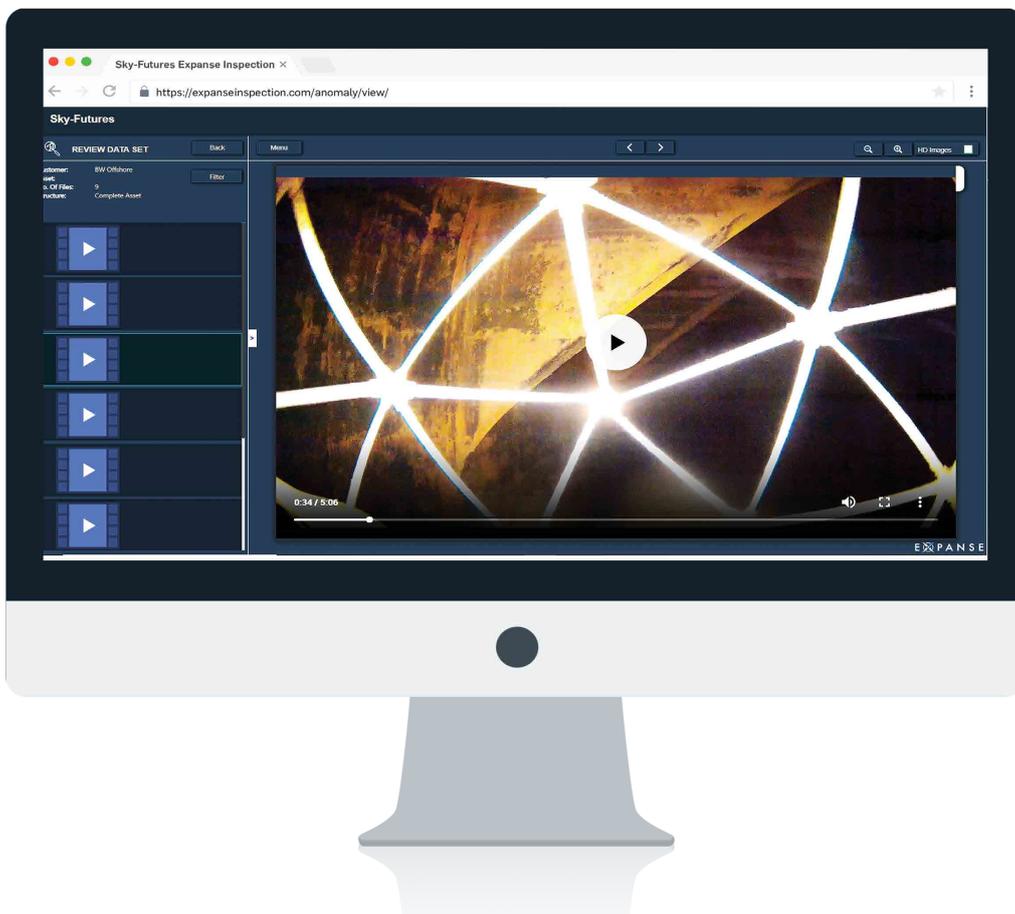
SOLUTIONS

Drones were chosen as the preferred method of inspection primarily to reduce the safety risk posed to personnel working in hazardous environment, as well as to save time.

9 DAYS
of inspection

Between five and ten flights were necessary to complete the inspection of a single tank, with each flight taking about ten minutes. The entire inspection scope was performed without the need for any human entry to the tanks. The drone was able to fly down into the FSO tank unaided and, by using Sky-Futures proprietary inspection technique, accurately navigate the internal space, conducting both General Visual Inspections (GVI) and Close Visual Inspections (CVI) of the space.

Using a collision-tolerant drone, the pilot can navigate it safely, directly in contact with the walls of the tanks when required. Thanks to its powerful onboard LEDs, the inspection of the tanks with the drone did not require the installation of any additional lighting source.



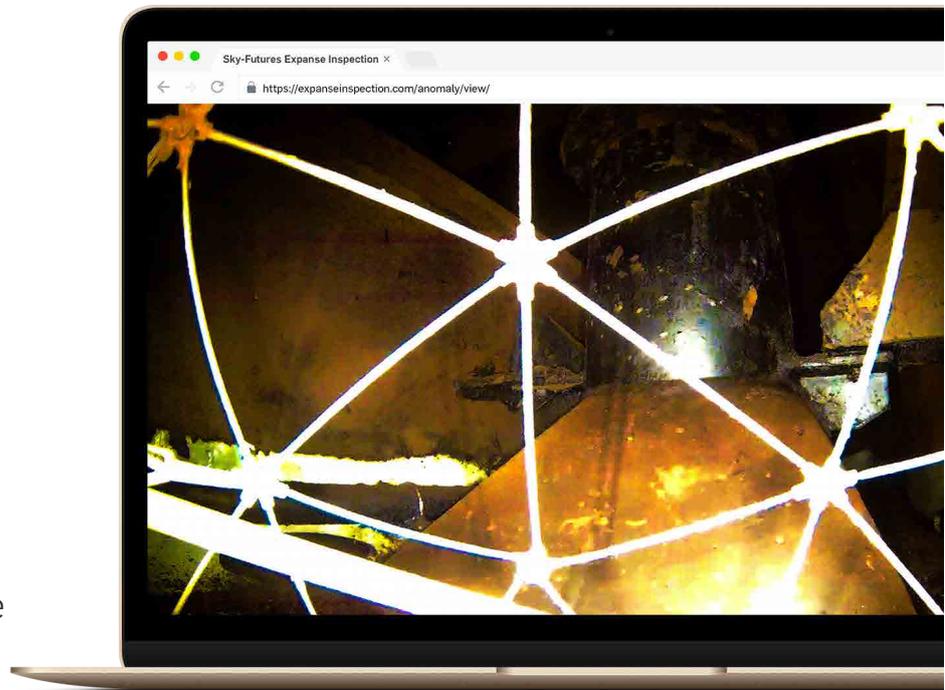
Review inspection data in EXPANSE® - Sky-Futures' AI-powered asset management, data analytics and reporting software

RESULTS

The project was carried out by a team of two - one inspector and one remote pilot. The entire internal surface of all 20 tanks was inspected in only 9 days.

The use of drones allows significant time and efficiency savings, minimising risks to personnel, offering a safer, more economical solution for detailed structural inspections.

Sky-Futures successfully completed the work scope delivering high-quality inspection reports through Sky-Futures' EXPANSE software which enabled the client to perform visual analysis and understand the tanks' condition. EXPANSE® also helped reducing the manual effort involved in producing inspection reports and provided actionable insights faster and more effectively.



20 tanks were inspected in
9 days instead of 60 days

INSPECTION APPLICATIONS

Since 2016, 21 F(P)SO and internal inspection projects in the oil & gas and maritime sectors have been successfully delivered. Sky-Futures has also been certified as the world's first drone specialist for internal vessel inspections by the American Bureau of Shipping (ABS), with case-by-case approval from Lloyd's Register and DNV-GL.

Flare Stack Inspection

Close visual and thermal inspection of flare tip, pilot ignition system, radiation shield, flare supporting structure, pipework, access platforms and handrails.

External Vessels Inspection

Close visual inspection of main structure, piping and utility systems, current condition of coatings and insulation, pipework support and deck/bulkhead penetrations.

Confined Space Inspection

General visual inspection and close visual inspection of critical hot spots, tanks, boilers and voids.

Structural Inspection

Close visual inspection of current condition of coatings, areas of degradation, areas of damage to supports, insulation and tertiary structure.

DROPS Evaluation

Inspection and identification of potential dropped object scenarios to prevent equipment and structure damage or even fatalities.

SKY -FUTURES

Sky-Futures has established itself as the world's leading provider of drone-based inspection services and has performed the world's first inspection of an FPSO cargo tank by drone without a human having to enter the tank.

Sky-Futures' end-to-end enterprise solutions include training packages, managed service, consulting and software solutions. We enable enterprises to perform safe and cost-effective drone inspections of a variety of vertical infrastructures, including but not limited to the following industries: Oil and Gas; Renewables; Utilities; Power and Civil Engineering.

We have customers in 27 countries across 5 continents. The business is headquartered in London with offices in Houston, TX in the USA, Kuala Lumpur in Malaysia, Abu Dhabi in UAE and Aberdeen in Scotland.

LET'S TALK



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