

VERTICAL GROUP

FLEXIBLE PIPE PERIODIC INSPECTION



SUCCESS CASE 50724



PROJECT OVERVIEW

Karoon Energy contracted Vertical Group to conduct a periodic inspection of flexible pipes on the FPSO Cidade de Itajaí. The primary objective was to assess the structural integrity of these pipes and detect potential anomalies that could compromise their operational performance. To achieve this, we employed a combination of rope access, visual inspection, and boroscopy, alongside drone technology to enhance efficiency and accuracy.

The Matrice RTK 350 drone was used as the first stage of inspection, providing a comprehensive aerial assessment of the flexible pipes. This initial scan helped identify potential anomalies and areas requiring a more detailed investigation. Subsequently, our rope access team conducted close-up visual inspections, particularly on the lower sections of connectors, where drone access was not feasible. The team also utilized boroscopy for internal examinations, ensuring a thorough evaluation of critical components.



APPLIED SOLUTIONS

Vertical Group implemented a structured and phased approach to optimize time and ensure precise results:

1) Drone Inspection (Matrice)

- Conducted an aerial visual inspection of the flexible pipes to detect visible anomalies.
- Identified areas requiring further investigation, streamlining the inspection process.

2) Rope Access Visual Inspection

- Performed close-up inspections on sections that were inaccessible to the drone, focusing on the lower part of connectors.
- Used rope access techniques to ensure a detailed and safe evaluation of critical structural components.

3) Boroscopy Inspection

- Applied boroscopy to inspect internal sections of connectors, identifying hidden anomalies.
- Provided an in-depth analysis of the structural condition of key accessories.

Throughout the inspection, we identified light to moderate corrosion in certain accessories, such as bolts and connectors. All findings were meticulously documented in a comprehensive inspection report, allowing the client to take appropriate maintenance actions proactively.



RESULTS ACHIEVED

The successful execution of this project reinforced Vertical Group's capability to deliver high-precision inspections with minimal operational downtime. The key benefits provided to Karoon Energy were:

- Optimized inspection time through the strategic use of drone technology, reducing the need for prolonged manual inspections.
- Enhanced accuracy by combining multiple inspection techniques, ensuring a complete evaluation of flexible pipe integrity.
- Improved safety measures by minimizing the need for prolonged worker exposure to high-risk areas.
- Comprehensive reporting, enabling the client to make informed maintenance and operational decisions with confidence.

Through this project, Vertical Group demonstrated its technical excellence, innovative approach, and commitment to operational efficiency, solidifying our position as a trusted partner in offshore inspection solutions.