

CASE STUDY

VERTECH GROUP

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NRA GUY WIRE REPLACEMENT





1 / Introduction

The North Rankin Complex (NRC) Facility, situated offshore of the Northwest Shelf of Australia, plays a crucial role in processing gas for transfer to the Karratha Gas Plant. Comprising the North Rankin A & B Platforms (NRA & NRB), this facility boasts a Flare Bridge supporting the Flare Stack, High Pressure (HP), and Low Pressure (LP) piping.

However, due to the risk associated with flare heat radiation, personnel were only allowed on the flare stack when it was offline, posing challenges for maintenance and necessary replacements. The project focused on replacing the long-overdue guy wires on the Flare Stack with the added challenge of unavailable mobile crane equipment.

2 / Innovation

The North Rankin Complex (NRC) Facility faced a critical maintenance challenge with the overdue replacement of guy wires on the Flare Stack. Traditional methods involving mobile cranes were no longer feasible due to equipment

unavailability and platform corrosion, making rope access the primary approach—the project innovatively combined rope access techniques with meticulous planning, engineering, and close visual inspections.

3 / Project Summary

Phase 1: Guy Wire Replacement Study

Woodside engaged Vertech Group to execute a study for replacing the 8-guy wires of the flare tower on North Rankin Alpha using rope access within the 24-day “gas to gas” window of the 2023 turnaround. Rope Access Techniques were employed, and scaffolding was erected to facilitate work areas and temporary barriers at various stages.

Phase 2: Project Planning & Engineering

Collaborating closely with the Woodside shutdown team and specialist contractors like Alliance Engineering, the Vertech project team delivered essential project elements, including a baseline project schedule, project execution POB profile, execution schedule, detailed implementation work packs, work method statements for site teams, an implementation bill of materials, lift plans, complex tensioning procedures, and conducted an onshore work method trial.

Phase 3: Pre-Shutdown Work

Guy wire replacement emerged as a complex and critical path task, necessitating detailed close visual inspections, load testing, and non-destructive testing (NDT) once the flare was fully blown down and isolated. Rigging equipment, inertia reels, rope access gear, davits, air hoses, and pig receivers were installed, and dropped object protection measures were established.

Fabric maintenance was performed on sections of the flare stack and pilot line pipe support, and potential dropped objects were removed. This phase concluded with the detailed sequence of guy wire replacement and tensioning for each wire, followed by de-rigging all materials.

Phase 4: Guy Wire Replacement

This phase mirrored Phase 3 but was crucial for successfully completing the complex and critical path task of guy wire replacement.

Client Testimonial

“The scope was completed over four weeks, involving significant rigging, scaffolding, and rope access coordination. The job was completed efficiently and without any incident, and the team also found improvements and adapted along the way. An outstanding team effort...”

- NRA HSEC

This case study highlights the innovative approach taken to overcome challenging maintenance issues, showcasing the successful collaboration between Woodside, Vertech Group, and other specialists. The project’s meticulous planning, use of rope access techniques, and thorough inspections led to the safe and efficient replacement of guy wires on the Flare Stack, ensuring the continued reliability and integrity of the North Rankin Complex (NRC) Facility.



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