

CR3

Nitrogen Services



YOUR CHALLENGES

Nitrogen is an extremely versatile commodity due to its availability and inert properties. It is used extensively in oil and gas facilities, both onshore and offshore and has applications ranging from purging, drying, and preservation of equipment to being used in the manufacture of petrochemicals, including ammonia.

Nitrogen is also extremely hazardous and short term exposure of no more than a few seconds, at a purity of 95% or higher, can have fatal consequences. Hence, having a proven track record of safely, reliably and efficiently handling, managing and working with nitrogen is a prerequisite that is in high demand.

OUR NITROGEN SERVICES

CR3 offers the full range of nitrogen services, both onshore and offshore, and has completed some of the most challenging projects in Asia. All of our specialist technicians are highly trained, extremely skilled and have significant operations experience.

HOW WE SUPPORT YOUR BUSINESS

As nitrogen is more easily and economically transported as a liquid, we have several nitrogen pump units for converting liquid nitrogen to gaseous nitrogen at a range of flow rates, pressures and temperatures, which can all be specified to suit the particular application via the control panel of the pump.

THE CR3 DIFFERENCE

CR3's large in-house team of highly trained technicians is subject to regular audits and a stringent safety passport scheme. We invest heavily in the latest equipment and SMART systems to maintain our reputation as the region's leading onestop provider of specialised maintenance services.

Innovative equipment and techniques

Whether you require purging to displace the atmosphere of a process, pressure testing and leak detection with mass spectrometry to verify equipment integrity, reactors cooled down quickly and efficiently, piggs propelled along a pipeline for cleaning and inspection or a nitrogen blanket to prevent air ingress and/or corrosion, we can satisfy your every need. The extra safety feature on our pumps in the form of over pressure protection (OPP), eliminates the chance of over pressurising a process system. The OPP is calibrated to the required safety pressure so that if it is tripped during pumping operations, the OPP shuts down the pump and prevents it from over-pressuring the system in question.

Outstanding QHSE performance

CR3 nurtures highly skilled and motivated teams that are committed to achieving "Pacesetter Performance" for the execution of shutdowns and turnarounds. Our quality and safety track record is maintained by continually investing in structured training programmes, knowledge sharing, new processes and modern, automated equipment that increases productivity while minimising the risk of injury.

Unrivalled experience

We aim to always deliver the best quality service, whilst ensuring the project is completed within schedule, within budget and without incident. We accomplish these achievements by investing in the latest equipment and technology to meet and exceed rising safety and quality standards in an efficient and cost-effective way.

Exceptional service

Working as one team, we support you with detailed planning, coordination and execution, through our multi-disciplinary approach and project management capability. With the full range of nitrogen services available, we have the ability to recommend the most suitable solution for your specific needs.



OUR SOLUTIONS

- Nitrogen purging
- Nitrogen drying
- Nitrogen pressure testing
- Nitrogen preservation / nitrogen blanketing
- Hot nitrogen stripping
- Reactor cool down
- Nitrogen-helium leak testing (NHLT)



YOUR BUSINESS BENEFITS

Benefit from a one-stop solution – that eliminates the need to manage multiple contractors on site over the course of your project.

Maintain high safety standards – by choosing a partner with a proven commitment to ensuring a safer workplace, both onshore and offshore.

Save time and money – by maintaining single-source control of the entire project with a single point of contact for onshore and offshore operators.

CR3 IN ACTION

The challenge

An exploration and petroleum company wanted to increase production of a drilling well from 960 bbl per day to 1,900 bbl per day.

The solution

CR3 mobilised a 180K, Zone II nitrogen pumping unit with accessories and connected it to the drilling well. Nitrogen was pumped into the hole at a rate necessary to increase the well pressure to achieve the desired flow rate.

The outcome

The nitrogen gas lift successfully increased the production rate to the target of 1,900 bbl per day.

CR3 is a leading provider of energy engineering solutions. Established in 1991, we provide specialised maintenance, plant upgrade, revamp and engineering services with a sharp focus on **Energy** Efficiency, **Engineering** Excellence, and Sustainable **Solutions**.

To learn more, visit CR3.Group

Leading one-stop provider of specialised maintenance services

CR3 supports your business with extensive contracting experience in the delivery of catered service packages, 'blind to blind' jobs and turnkey maintenance services during major shutdowns and turnarounds. Our business upholds a culture and track record of integrated management systems that are certified to multiple international standards.

Our Solutions

We offer a comprehensive portfolio of maintenance services that are grouped into six business lines. Our experts deliver these services – onshore and offshore – on time and on budget.

Our complete 'blind to blind' solution ensures more streamlined and efficient projects, as we maintain direct, single-source control of all critical path elements. We cater to projects of widely varying scope and complexity, and can deliver multiple shutdowns concurrently.

Related services:

- Static & Rotating Equipment Maintenance
- Industrial Scaffolding
- Mechanical Services
- Column Modifications & Repairs
- Total Heat Exchanger Maintenance
- Flare Tip Replacements & Repairs
- Cleaning & Decontamination Services
- Mercury Management Services
- Catalyst Handling Services
- Nitrogen Services
- Waste Handling
- Decommissioning Services
- Insulation Services
- Valve Maintenance
- Storage Tank Cleaning & Maintenance

Our experts meet your demands for shorter change-outs, leaner project teams and superior quality standards for all reactor types with end-to-end solutions that reduce downtime and increase profitability.

Related services:

- Catalyst & Adsorbent Handling Services
- Tubular Reactor Services
- Dense Loading
- 'Blind to Blind' Mechanical Services
- Reactor Internals Replacement & Repairs
- Nitrogen Services
- Waste Handling

We clean and inspect virtually all plant vessels, columns, drums and piping systems, both onshore and offshore, with services that can be tailored to requirements.

Related services:

- Pre-Commissioning & Commissioning Services
- Nitrogen Services
- Pipeline Cleaning (Chemical & Mechanical)
- Pipeline Flooding
- Pressure Testing
- Dewatering
- Drying
- Purging

Our investment in training, equipment and SMART systems combined with our focus on safety and rigorous planning, preparation and execution of work underpins our track record as a leading provider of mechanical & plant maintenance services.

Related services:

- Static Equipment Maintenance
- Rotating Equipment Maintenance
- Specialist Cutting Services
- Online Leak Sealing
- Controlled Bolting
- Reactor Repairs & Maintenance
- Plant Change & Piping Modifications
- In-situ Flange Facing & Machining
- Industrial Scaffolding
- Insulation Services
- Valve Maintenance
- Continuous Plant Maintenance
- Storage Tank Cleaning & Maintenance

Our extensive portfolio of cleaning services sets the benchmark in terms of technical, environmental and safety standards.

Related services:

- Chemical Cleaning Services
- Mercury Management Services
- Fin Fan Optimisation
- Hydro Jetting Services
- CR3 Decoking Technology (CDT)
- Decontamination Services
- Waste Handling

We deliver projects safely, on time and on budget by ensuring single-source control through our multi-disciplinary approach and project management capability.

Related services:

- Process Revamps, Rejuvenations & Retrofits
- Construction & Constructability Reviews
- Engineering, Procurement & Commissioning Services
- Operations & Maintenance
- Dismantling, Demolishing & Removal of Equipment
- Fabrication of structural, Carbon Steels & Pipe Systems
- Fabrication of Stainless Steels & Special Alloys
- Installation of Large Equipment & Pipe Systems
- Welding
- Hot & Cold Cutting
- Scaffolding & Insulation



CR3 is a leading provider of energy engineering solutions. Established in 1991, we provide specialised maintenance, plant upgrade, revamp and engineering services with a sharp focus on **Energy** Efficiency, **Engineering** Excellence, and Sustainable **Solutions**.

Contact us today to learn more

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