



# Pre-Commissioning Services



## YOUR CHALLENGES

Prior to taking any reactor, vessel or piping system into commission, owners and operators of refineries and other processing plants need assurance of safety, quality and reliability. An improperly manufactured or installed pipeline can pose a significant risk to your company, its people and the environment. The best way to establish and maintain prime operational capabilities is to properly prepare and quality assure all essential equipment at the precommissioning stage.

## OUR PRE-COMMISSIONING SERVICES

CR3 offers a comprehensive portfolio of properly engineered, high quality pre-commissioning and commissioning services. Operating under a single project management team to ensure optimal safety, quality and schedule efficiency, we support our clients with detailed planning, coordination and execution

for various scopes of construction completion, pre-commissioning and commissioning activities such as pressure testing, water flushing, air blowing and drying. In addition, our highly experienced, multidisciplinary experts undertake many specialist activities such as chemical cleaning, lube oil flushing, hydro jetting, pneumatic testing, helium / nitrogen leak testing, inspections and other associated actions within the construction environment.

## HOW WE SUPPORT YOUR BUSINESS

Engaging us as your single-source , all-inclusive solutions provider gives you confidence that our highly trained experts are applying their decades of experience to optimise your facility's performance. Our professional personnel take pride in delivering our full range of services to the highest industry standards.

## 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 one-stop provider of specialised maintenance services.

### Innovative equipment and processes

CR3 does not compromise when it comes to investing in state-of-the-art tools and machinery. As part of our commitment to offering superior service to our clients, we use modern automated equipment that guarantees unrivalled quality, speed and safety in every project. Furthermore, our strategic partnerships augment our inhouse offering, enabling us to provide holistic solutions that utilise the most advanced cleaning and maintenance technologies available.

### Exceptional QHSE performance

Safety is the central tenet of every pre-commissioning project we undertake. Our commitment to safety has led to the implementation of our own safety passport system, with all our technicians being accredited through a rigorous in-house training programme. You and your stakeholders can be assured that our work is not only timely and costefficient, but safe and reliable too.

### World-class experience

With decades of front-line multidisciplinary experience, CR3 is uniquely capable of offering a one-stop solution for all your pre-commissioning needs. Our specialists are certified experts, with internationally recognised certifications that cover the detailed operation and maintenance of the units under their care.

## Unrivalled service

Over the years, we've nurtured a strong customer-focused culture that ensures on-time, on-budget delivery for all your planned and unplanned pre-commissioning, commissioning, maintenance and de-commissioning activities. Our commitment to service excellence is backed by our track record of integrated management systems that are certified to multiple international standards.



## OUR SOLUTIONS

### Pre-commissioning of reactors and vessels

- Nitrogen purging of hydrocarbons
- Initial catalyst loading
- Flange management
- Column internals installation
- Cold cutting
- Bolt torquing and tensioning
- Pneumatic testing
- Air blowing and drying

### Pre-commissioning pipeline cleaning

- Nitrogen / Helium Leak Testing (NHLT)
- Vacuum testing (inside to outside or outside to inside)

- Pressure testing
- Nitrogen preservation
- Hot oil flushing of critical oil piping systems
- Online pipeline maintenance pigging programmes
- Internal pipeline coating
- Pipeline mercury removal / decontamination programmes
- Pipeline descaling and derusting
- Pipeline gauging
- Pipeline intelligent pigging
- Pipeline abandonment programmes (special programmes for mercury contamination)
- Special oxygen piping systems

## 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.

**Ensure high safety standards** – by choosing a partner with a proven commitment to maintaining a safer workplace in both onshore and offshore environments.

**Save time and money** – with a single contractor that supports numerous activities and reduces costs by utilising multi-skilled personnel to perform the full range of jobs you need done.

## CR3 IN ACTION

### The challenge

An offshore fabrication company needed a specialist contractor to perform the pre-commissioning of a new subsea pipeline system.

### The solution

CR3 was chosen to perform the pre-commissioning due to our dedicated commitment to safety. Upon appointment, CR3 proceeded to perform full precommissioning operations, coordinating and supervising the project throughout.

### The outcome

The pre-commissioning process was completed safely and efficiently, with all relevant risks being identified and dealt with and all tasks completed according to schedule.

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

#### CR3 Group

17<sup>th</sup> Floor, Unit 1706  
Two Pacific Place Building  
142 Sukhumvit Road  
Klongtoey, Bangkok 10110, Thailand  
Tel: +66-2-653-3913-5  
Fax: +66-2-653-3916  
Email: cr3g@cr3.group

#### CR3 Thailand

15/1 Moo 3, Bankoh - Mabkha Road  
Mabkha, Nikompattana  
Rayong 21180, Thailand  
Tel: +66-38-698-399  
Fax: +66-38-698-398  
Email: cr3t@cr3.group

#### CR3 Malaysia

P.T. 6068, Teluk Kalong Industrial Area  
24000 Kemaman  
Terengganu Darul Iman, Malaysia  
Tel: +60-9-863-2325 to 26  
Fax: +60-9-863-2328  
Email: cr3m@cr3.group

#### CR3 Singapore

156 Gul Circle  
Singapore 629613  
Tel: +65-6268-0255  
Fax: +65-6268-3369  
Email: cr3s@cr3.group

#### CR3 (India) Private Limited

601, 6<sup>th</sup> Floor, Building No. 9, Gigaplex  
Plot No. IT-5, Airoli West, MIDC  
TTC Industrial Area  
Navi Mumbai 400708, India  
Tel: +91-22-6288-1000  
Email: cr3i@cr3.group

#### CR3 Middle East

Musaffah, M19  
Plot #1 DSV Solutions  
Abu Dhabi, UAE  
PO Box 132569  
Tel: +971-2-583-4228  
Email: cr3me@cr3.group

Or visit **CR3.Group**

