



YOUR RELIABLE PARTNER

## Shutdown & Turnaround Services



### YOUR CHALLENGES

Every industrial processing plant must undergo periodic shutdowns and turnarounds to maintain safe operations and optimal production levels while meeting ever-evolving Quality, Health, Safety and Environmental (QHSE) standards. Failing to execute shutdowns and turnarounds safely and efficiently can have a profound impact on your business, its people and the environment. Given the potentially huge losses for every day of downtime, delivering safe shutdowns and turnarounds while minimising both the number and duration of these events is critical.

### OUR SHUTDOWN AND TURNAROUND SERVICES

Shutdowns and turnarounds are the mainstay of CR Asia's business. We adopt a disciplined, multi-phase approach to plan, schedule, staff and execute projects of all sizes to ensure your plant is back up and running quickly, safely, reliably and at optimal efficiency. Our One-Stop Multidiscipline Solution enables us to deliver safe, successful shutdowns and turnarounds throughout the Refining, Petrochemical, Upstream Oil & Gas, Power Generation and other heavy industries.

### HOW WE SUPPORT YOUR BUSINESS

You can engage our experts from the very onset to lead or support detailed project planning, preparation, scope challenges and compilation of work packages. During shutdowns, we mechanically isolate parts that require routine maintenance, allowing the rest of the plant to remain operational while maintenance is carried out. The affected equipment is opened up, cleaned, inspected and repaired before being reinstated, deisolated, and readied to be taken back into the process. For turnarounds, we perform the same scope of maintenance and repair work on a larger scale involving a plant-wide shutdown.

Our holistic approach encompasses every aspect of shutdowns and turnarounds, from beginning to end. To identify opportunities for further improvements, cost savings and best practices, we place particular emphasis on the debriefing stage. Together with our strategic partners, we have access to the necessary resources, equipment, expertise and experience to carry out multiple large-scale projects simultaneously.

## THE CR ASIA DIFFERENCE

CR Asia'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.

### State-of-the-art equipment and processes

We optimise shutdown times through meticulous planning, exceptional programme management, proactive procurement, easy-to-use systems and processes for tracking progress against KPI's, and the deployment of experienced manpower to operate modern automated equipment that is quicker, safer and more efficient. This offering is enhanced by a strong network of technology partners with advanced maintenance solutions to improve quality while setting new safety standards and boosting asset performance.

### Outstanding QHSE performance

CR Asia 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.

### Depth of experience

CR Asia is recognised as the region's leading shutdown and turnaround expert for onshore and offshore projects. Every service we provide is delivered as part of our shutdown and turnaround activities. This means our personnel are constantly exposed to these types of events. Each year, we

perform around 100 shutdowns and turnarounds across the region.

### Exceptional service

As a leading one-stop provider of specialised maintenance and industrial services, we are able to support your project from start to finish by having expert staff on site throughout the entire process. Our 'blind to blind' approach spans every stage, from pre-planning and execution right up until the plant is reactivated. For work scopes outside of our core capabilities such as scaffolding and crane operation, our experts can procure and manage the full range of services via trusted sub-contractors.



## OUR SERVICES

- Specialised mechanical services
- Column and tower internal modifications and repairs
- Heat exchanger services including repairs and retubing
- Catalyst handling and reactor services
- Chemical cleaning and decontamination
- Mercury management and decontamination
- High pressure water jet and industrial cleaning
- Tank cleaning and repairs
- CDT furnace decoking
- Decommissioning and pipeline services
- Nitrogen services
- Offshore maintenance services
- Flare tip replacements and repairs
- Controlled bolting and flange management
- In-situ machining
- Online leak sealing
- Waste handling and vacuum truck services

## YOUR BUSINESS BENEFITS

**Benefit from a one-stop solution** – for planning, scheduling, managing and executing all maintenance activities required during even the largest shutdowns, saving you the expense and hassle of engaging multiple contractors for a single event.

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

**Maintain high safety standards** – by choosing a partner with a proven commitment to superior safety in the workplace.

## CR ASIA IN ACTION

### The challenge

An integrated refinery and petrochemical complex in Asia had to open, clean, inspect and box up over 150 major equipment items in a 30-day window.

### The solution

CR Asia deployed 30 people a year ahead of the turnaround to plan schedules and maximise efficiency. Over 1,200 personnel were mobilised to execute the works.

### The outcome

With zero lost-time incidents and zero medical-time incidents, the shutdown was completed within budget and actually beat the schedule by a few days, achieving significant savings for an extremely satisfied client that now looks forward to a 5-year run before the next major turnaround.

## CR ASIA – YOUR RELIABLE PARTNER

CR Asia is the leading provider of highly specialised pre-commissioning and maintenance services to the Oil, Gas, Chemical, Power and other heavy industries throughout Asia. As your reliable partner, we provide the safest and most efficient solutions to the maintenance, repair and overhaul challenges facing your business. **To learn more, visit [www.crasia.net](http://www.crasia.net)**

# Your Reliable Partner

## Asia's leading one-stop provider of specialised maintenance services

CR Asia 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 Services

We offer a comprehensive portfolio of maintenance services that are grouped into five 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 have the capacity to deliver multiple shutdowns concurrently.

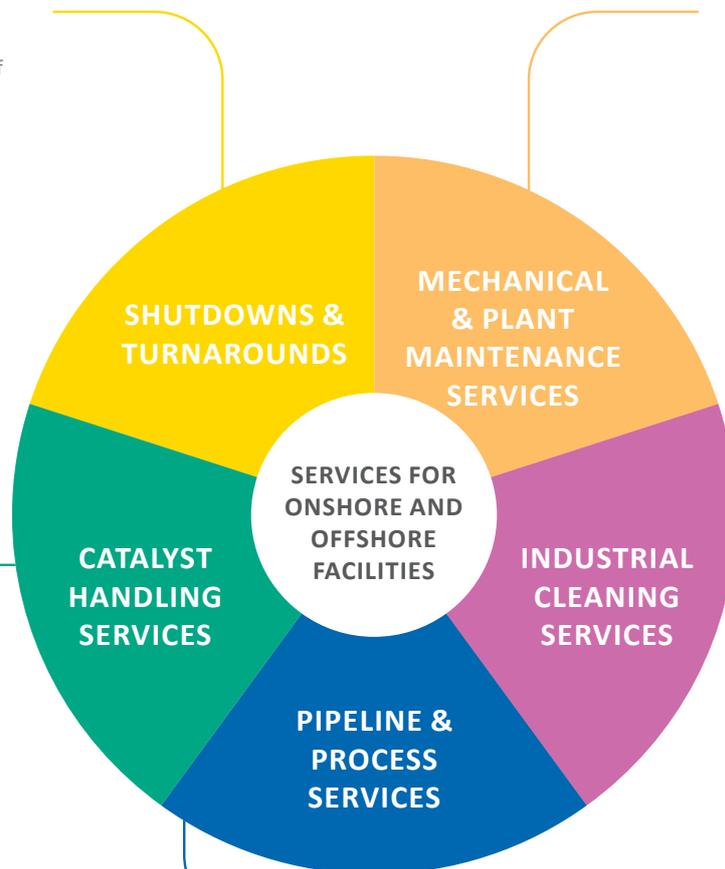
### Related services:

- Mechanical Services
- Column Modifications & Repairs
- Total Heat Exchanger Maintenance
- Flare Tip Replacements & Repairs
- Cleaning & Decontamination Services
- Mercury Management Services
- Catalyst Services
- Nitrogen Services
- Waste Handling
- Decommissioning Services

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



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. The knowledge and experience gained from each job is channelled into the next generation of solutions.

### Related services:

- Static Equipment Maintenance
- Specialist Cutting Services
- Online Leak Sealing
- Controlled Bolting
- Reactor Repairs & Maintenance
- Plant Change & Piping Modifications
- In-situ Flange Facing & Machining
- Continuous Plant Maintenance

Recognised as Asia's leading 'one-stop shop' solution provider, 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
- CR Asia Decoking Technology (CDT)
- Decontamination 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 Business

# 25



years in business



# 4



operational bases serving 18 active markets



# 4000<sup>+</sup>



experts



## Our Partners

CR Asia has established long-term alliances with a number of key strategic partners. This collaborative approach ensures our customers always benefit from having access to the most appropriate tools and technologies on any given project. We recognise our industry is constantly evolving. That's why we are continuously looking to expand our network of strategic alliance partners.



## CR Asia – Your Reliable Partner

CR Asia is the leading provider of highly specialised pre-commissioning and comprehensive maintenance services to the Oil, Gas, Chemical, Power and other heavy industries throughout Asia. As your reliable partner, we provide the safest and most efficient solutions to the maintenance, repair and overhaul challenges facing your business.

### Contact us today to learn more

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