

REFERENCE CASE REFINERY



Corrosion Inspection and NDT Services for Large Oil Company in the United Arab Emirates

When a United Arab Emirates' state-owned oil company required corrosion inspection and non-destructive testing (NDT) services on all its fields and terminals in six locations, a reliable partner with technical expertise in the field of advanced NDT methods was essential. That is why they turned to TÜV Rheinland.

| Basic Facts | |
|--------------------------------|--|
| Client | State-owned oil company of the United Arab Emirates |
| Project location | Abu Dhabi, United Arab Emirates |
| Main services | <ul style="list-style-type: none">▪ Corrosion inspection▪ Non-destructive testing services |
| Involved regulations/standards | <ul style="list-style-type: none">▪ American Petroleum Institute (API) standards▪ American Society for Non-Destructive Testing (ASNT) standards▪ American Society of Mechanical Engineers (ASME) standards▪ American Society for Testing and Materials (ASTM) standards |

Initial situation and requirements

To identify the degree of corrosion and the residual life of oil and gas pipelines and equipment, continuous monitoring of the oil terminals is necessary. In an effort to check the quality of the welding joints and to determine wall thickness of its pipes, a state-owned oil company in Abu Dhabi required comprehensive corrosion testing services for its equipment throughout the company's entire fields and terminals in six locations.

Many significant advances have been made in the field of corrosion testing over the last few years. Although control procedures have only been associated with scheduled maintenance and non-destructive evaluation in the past, early diagnostic for corrosion, condition-based maintenance and technologies related to paint removal have become a new central subject of interest and are undergoing continuous improvement.

Solutions, results

For this project, TÜV Rheinland was the preferred choice to provide corrosion and inspection services of the oil company's pipelines at six oil fields and terminals. Increasing corrosion costs have recently given rise to the need for early detection, and, in the meantime, to a reduction in unnecessary inspections. Monitoring during service has therefore become the key solution for this new approach.

Furthermore, knowing that prevention and early detection of corrosion are far more cost-effective than conducting repairs after damage is done, the oil company required our comprehensive services and support for a three-year period. For this project, our experts employed corrosion monitoring sensors and NDT technologies, the most effective and appropriate tools to prevent and hinder corrosion on pipes. In order to further minimize the risks and costs, we also recommended our client use corrosion-resistant materials for its pipes.

The expert team of TÜV Rheinland helped the client evaluate the most affected and corroded areas, estimate the costs and plan the priority of intervention on the damaged pipes.

Did you know?

Abu Dhabi is the largest of the seven United Arab Emirates and owns the majority of the oil and gas resources of the emirates, with 95% of the oil and 6% of the gas resources.

Benefits for the client

TÜV Rheinland provided the client with:

- [Reliable inspection data and recordable inspection results.](#)
- [Tailored corrosion monitoring systems and preventive solutions.](#)
- [Early detection of corrosion and potential damage.](#)
- [Advanced NDT services during pipe operation to ensure cost- and time-savings.](#)

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About TÜV Rheinland:

Founded more than 140 years ago, TÜV Rheinland is a global leader in independent inspection services, ensuring quality and safety for people, the environment, and technology in nearly all aspects of life.

We inspect technical equipment, products and services, oversee projects and help to shape processes for companies around the world. Since 2006, we have been a member of the United Nations Global Compact to promote sustainability and combat corruption.

As one of the leading providers of inspection services in the oil and gas industry, we can help you reduce risk, prevent material defects and ensure maximum safety and optimal functioning of your plants and pipelines. Throughout the entire project we can support you with certification, inspection and consulting services and help you meet your obligations for all applicable standards and regulations.

We can provide a full range of conventional and advanced non-destructive testing services through our global network. With our state-of-the-art inspection technologies, our clients save overall maintenance costs, improve production quality and ensure reliable operation of plants and equipment.