

# REFERENCE CASE REFINERY



## Risk-Based Inspection Services for Lithuanian Oil Refinery

Facing EU fuel quality and safety requirements, ORLEN Lietuva was in the process of implementing a comprehensive modernization program to raise the refinery's capabilities and meet with the highest safety standards. For this project, the company required a reliable partner with extensive technical experience in the field of risk-based inspection (RBI) services for the oil and gas industries. That is why they turned to TÜV Rheinland.

### Basic Facts

Client	ORLEN Lietuva
Timeframe	January 2013 - ongoing
Project location	Lithuania
Main services	Risk-based inspection services for oil refinery
Involved regulations/standards	<ul style="list-style-type: none"><li>▪ API RP 580 regulation</li><li>▪ API RP 581 regulation</li></ul>

### Initial situation and requirements

ORLEN Lietuva is a petroleum refining company operating a crude oil and petroleum product network and marine terminal, as well as the only petroleum refinery in the Baltic States. The refinery is the most advanced built in the former Soviet Union and started operating in 1980. The refinery complex is situated in northwestern Lithuania. Technologies applied in the refinery enable ORLEN Lietuva to provide high-quality products and to establish itself as the most important supplier of petrol and diesel fuel in Lithuania, Latvia and Estonia.

In crude oil processing, great attention is paid to plant equipment risk status and the prevention of potential failure. ORLEN Lietuva made major investments in risk-based inspection services not only to optimize maintenance and determine the overall risk to the refinery, but to assess the probability of failures to protect the environment as well.

## Solutions, results

Our extensive experience in plant safety services and our profound knowledge of international standards made TÜV Rheinland the preferred choice for ORLEN Lietuva.

In processing plants, a large percentage of the total unit risk is concentrated in a relatively small percentage of equipment. These potential high-risk components demand greater attention requiring a revised inspection plan. Therefore, our expert team applied state-of-the-art RBI methodology based on the API RP-580 and API RP-581 regulations and the latest version of E2G software “Plant Manager (PM)” to analyze the operational risks associated with this equipment.

Experts at TÜV Rheinland Hungary have conducted risk-based inspection services for the first phase, and the project now continues with the second phase. Our team provided risk-based inspection services and methodology for the ORLEN Lietuva refinery’s static equipment, consisting of crude atmospheric distillation units, fluid catalytic cracking and hydrogen production units, pressure vessels, piping, boilers and heaters.

### Did you know?

Our team of TÜV Rheinland InterCert Kft. provided risk-based inspection services for 4246 components and static equipment at the refinery.

### Benefits for the client

TÜV Rheinland supported the client with:

- **Comprehensive technical expertise in risk analysis and risk evaluation to improve the effectiveness of equipment maintenance.**
- **Tailored risk-based inspection technology using the latest version of TÜV Rheinland’s E2G software.**
- **Experienced experts to conduct the required inspections during operation – saving time and resources.**

### 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.

We offer you extensive energy sector experience, providing specialized solutions for all types of power plants –traditional, renewable and nuclear – as well as oil and gas plants and pipelines and manufacturing plants for industrial products.

Our comprehensive portfolio offers a wide range of services in all project phases including design, manufacturing, construction, commissioning, operation and maintenance. We can also provide consultancy for safety, environmental, system certification and data management issues.

### Your contact:

TÜV Rheinland Group  
Industrial Services  
is@tuv.com  
www.tuv.com