

REFERENCE CASE REFINERY



Risk Analysis and Risk Evaluation Services for Romanian Refinery

In the course of an ambitious investment program for the Petrobrazi refinery in Romania, hazard and operability (HAZOP) studies and safety integrity level (SIL) determination had to be conducted. To facilitate these works, S.C. IPIP S.A. Ploiesti required a reliable partner with extensive experience in risk analysis and risk evaluation services. That's why they turned to TÜV Rheinland.

Basic facts	
Client	S.C. IPIP S.A. Ploiesti (The Engineering and Design Institute for Oil Refineries and Petrochemical Plants)
Involved companies	■ OMV-Petrom Group Romania ■ Honeywell Romania SRL
Timeframe	June 2012 – October 2012
Project location	Ploiești, Romania
Main services	■ Support for HAZOP studies and safety integrity level (SIL) determination for the DCS (distributed control system) and ESD (emergency shutdown) system implementation ■ Project management
Involved regulations/standards	■ IEC 61882 HAZard and Operability studies (HAZOP studies) – Application guide ■ ISO 17776 (Hazard classification and numbering) ■ OMV Petrom internal standard for Layer of Protection Analysis (LOPA)

Initial situation and requirements

S.C. IPIP S.A., the Engineering and Design Institute for Oil Refineries and Petrochemical Plants, is a Romanian company with a large range of capabilities and experience, which was established in 1950, as a milestone in the development of the petroleum, hydrocarbon processing and petrochemical industries as well as their related fields. For the Petrobrazi refinery in Ploiești, OMV-Petrom initiated a major investment program that is still ongoing. Acting as a subcontractor for OMV-Petrom, S.C. IPIP S.A. engaged TÜV Rheinland Romania to conduct necessary hazard and operability (HAZOP) studies and safety integrity level (SIL) determination for the DCS (distributed control system) and ESD (emergency shutdown) system implementation at the Petrobrazi refinery.

Solutions, results

Thanks to our extensive experience in risk analysis and risk evaluation services and our profound knowledge of regulations and standards, TÜV Rheinland was the preferred choice for S.C. IPIP S.A.

For the implementation of a DCS and ESD system at some units of the refinery, we provided comprehensive risk analysis services including support for HAZOP studies according to the “IEC 61882 HAZard and Operability studies (HAZOP studies) - Application guide” in order to identify and evaluate potential problems that may put equipment or personnel at risk. In addition, we offered recommendations for improvements of the design and operation.

To facilitate the execution of the HAZOP studies, we also provided special computer software and assisted in preparing necessary documents for HAZOP meetings and final deliverable reports issuance.

In order to define the safety integrity level (SIL), our experts offered support for the SIL determination according to the layers of protection analysis (LOPA) method. This way, we could offer a reference record of a rigorous SIL determination.

During the entire project, we acted as project manager and handled all parties involved. Thanks to our support, the HAZOP studies and SIL determination were successfully conducted.

Did you know?

The Petrobrazi refinery in Ploiești is one of the leading Romanian refineries.

Benefits for the client

TÜV Rheinland supported S.C. IPIP S.A. by providing:

- Comprehensive technical expertise in risk analysis and risk evaluation services.
- Experienced experts to conduct the required works on time.
- Guaranteed compliance with applicable standards and regulations.

About TÜV Rheinland:

TÜV Rheinland is a global leader in independent inspection services, founded more than 140 years ago.

We inspect technical equipment, products and services, oversee projects and help to shape processes for companies. 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.

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