

# DeltaV OTS<sup>®</sup> Improves Knowledge Transfer and Abnormal Situation Management

## RESULTS

- Improved Operational Effectiveness
- Fast Return on Investment
- Accelerated production of facility through less process trips
- Abnormal Situation Management & Training before Start-up of unit



## APPLICATION

A DeltaV OTS for a new Mild Hydrocracking Unit.

## CUSTOMER

Romp petrol, Petromidia Refinery located near Constanta, Romania.

## CHALLENGE

The refinery was built in the 1970's and has been owned by the Rompetrol group since 2001. It is the largest oil refinery in Romania with a rated capacity of 10 000 bbl/day. The facility is located on the Black sea coast and imports oil by sea. Because of the associated shipping costs and importance to the supply chain it is important that the refinery is operated as efficiently and safely as possible to ensure the business is profitable.

Part of the capacity increase program for the Petromidia Refinery, from 3.8 million tons/year, to over 5 million tons/year of processed raw materials, the Mild Hydrocracking Unit is designed to process a blend of vacuum gas oil and coker oil in order to produce De-sulphurised feed stocks to be processed within the refinery.

Romp petrol employed Emerson Process Management to provide a DeltaV OTS. It was required to provide an identical, realistic and non-intrusive environment for operations personnel to train and gain familiarity with both the process and DeltaV system operation, as well as,

- To provide an effective learning environment
- Abnormal situation management.
- Start-up/Shut-down training
- Student grading and report generation

*“The process simulator for the Mild Hydrocracking Unit supplied by Emerson, was a premier application for Rompetrol Refining”*

Tiberiu Crudu

Unit Manager Rompetrol Refinery



For more information:  
[www.EmersonProcess.com/](http://www.EmersonProcess.com/)



## SOLUTION

To achieve the required goals, Emerson developed a DeltaV OTS using the SEEDS (Standard Entities for the Engineering of Dynamic Simulators) platform. It is a medium fidelity native DeltaV dynamic simulation, which provides a realistic and effective simulation environment within a single integrated database. The SEEDS solutions has a number of benefits compared to alternative OTS solutions, which include,

- Stable integrated simulation environment
- Developed using library of pre-tested simulation entities
- No integration issues as no OPC is required
- Flexible architecture
- Increased speed of response as solution resides within a single database
- Ongoing maintenance /update is made easy and inherent to its design
- Reduced licensing requirements

The solution developed consisted of the process specific SEEDS simulation, a copy of the actual DeltaV ICSS (Integrated Control & Safety System) and the DeltaV Simulate software. These components were integrated to provide an identical simulated training environment, with the same functionality as the main project DeltaV system.

DeltaV OTS has a selection of advanced simulation tools inherent to its design, including,

- Initial /Steady State conditions - snapshots
- Scenarios - enables depiction of a series of timed actions/ occurrences in the operation
- Malfunctions—simulated failure of equipment/system in the process model
- FODs - Field Operated Devices



***“ DCS operators will be much more prepared for "real" plant operation, good knowledge of DeltaV unit screens, adjusting the process parameters and even managing the emergency situations.”***

**Operations personnel at Rompetrol**

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