INNOVATION and PATENTS

The RECONDENSER developed by SOFREGAZ is a vertical stainless steel vessel used in LNG import terminals to condensate boil-off gas (BOG) and ballasting nitrogen by sub-cooled LNG.

The Recondenser is installed in a bypass of the header between the LNG low pressure pumps and the LNG high pressure pumps.

References

Seven Recondensers are already in operation and two are under construction:

Montoir-de-Bretagne, FRANCE – in operation since March 2001

Dahej, INDIA - in operation since February 2004

Hazira, INDIA - in operation since April 2005

Guangdong, CHINA - in operation since August 2006

Sabine Pass, USA - in operation since July 2008

Shanghai, CHINA - in operation since October 2009

Fos-Cavaou, FRANCE - in operation since December 2009

Manzanillo LNG Terminal MEXICO – in operation since April 2012

Puerto El Musel Terminal SPAIN – under construction

Design Concept and Control Philosophy

According to SOFREGAZ concept, the main flowrate of LNG is supplied through the LP pumps discharge header to the HP pumps.

Only the quantity of LNG required for condensation of the BOG is fed to the Recondenser.

Advantage versus others designs

- **Operation at variable pressure**: the operating pressure can be easily adjusted by a control valve or by variation of the speed of LP pumps.
- **Stable pressure at the HP pumps suction**: the main control loop adjusts the pressure at the Recondenser outlet. The pressure at HP pumps suction is not changing with LNG level or LNG density, and the operation of HP pumps is more stable.
- **Improvement of the terminal availability**: as the Recondenser is installed in a bypass of the LP pumps discharge header, the terminal send out operation is not affected in case the Recondenser or the BOG compressors trip or are out of service. The Recondenser inspection is also simplified and possible without terminal shutdown.
- **Only two control loops (no level control)**.
- **Reduced foot print.**