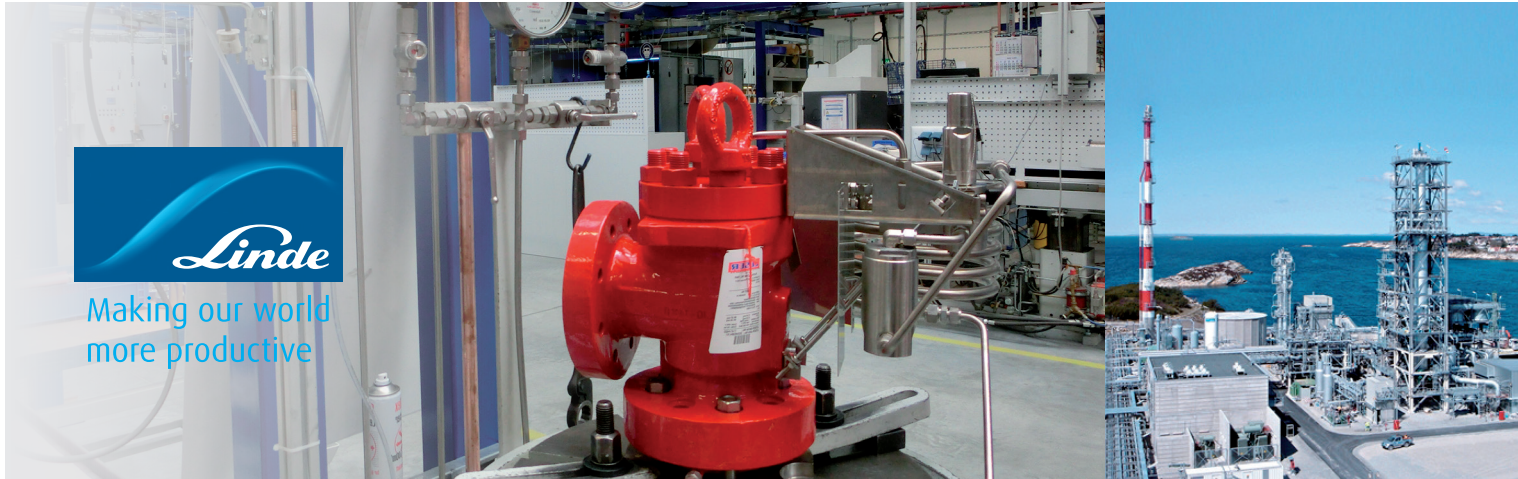


LNG

LESER LNG POSVs support high plant efficiency in liquefaction process.



About the project

The compressor station on the Russian Baltic Sea coast is the starting point of the Nord Stream pipeline, which transports natural gas to Western Europe. The station was expanded in 2019 to liquefy Natural Gas in addition to Liquefied Natural Gas (LNG). Its annual production capacity is around 1.5 million tons of LNG, making it a mid-scale facility.

Linde was selected as the licensor of the plant complex for the production, storage and transport of liquefied natural gas.

The challenge

The liquefaction process must be designed efficiently so that the LNG can be offered economically. The necessary cryogenic media temperatures of -161 to -164 °C represent a challenge for the technical design of the individual components in the plant. This also applies in particular to the safety valves, which must function reliably as the final protection in the event of overpressure, even at the cryogenic process and Russian ambient temperatures.

Linde expected its suppliers to provide a reliable and punctual delivery in addition to solving the technical requirements.

The LESER solution

LESER valves meet all requirements for use in natural gas liquefaction plants and offer a complete product range. The valves are designed in the low-maintenance "Durable Design" and can be adapted to the plants by various options.

The tightness of the safety valves has been proven under real conditions at media temperatures below -146 °C on LESER's own cryogenic test bench. The precise helium leak test is based on the DIN EN 13648-1 standard.

Facts and figures

Customer:

Linde

Industry / Application:

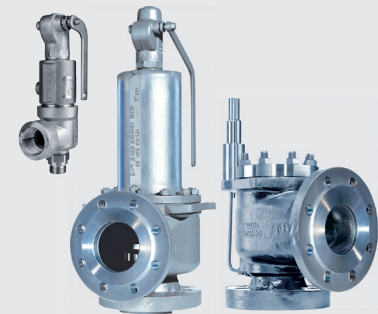
LNG / natural gas liquefaction plant

LESER Products:

POSV, Compact Performance, API

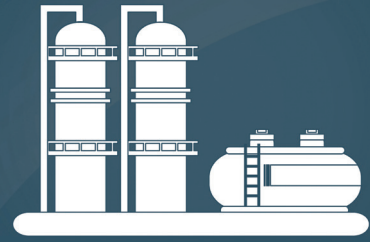
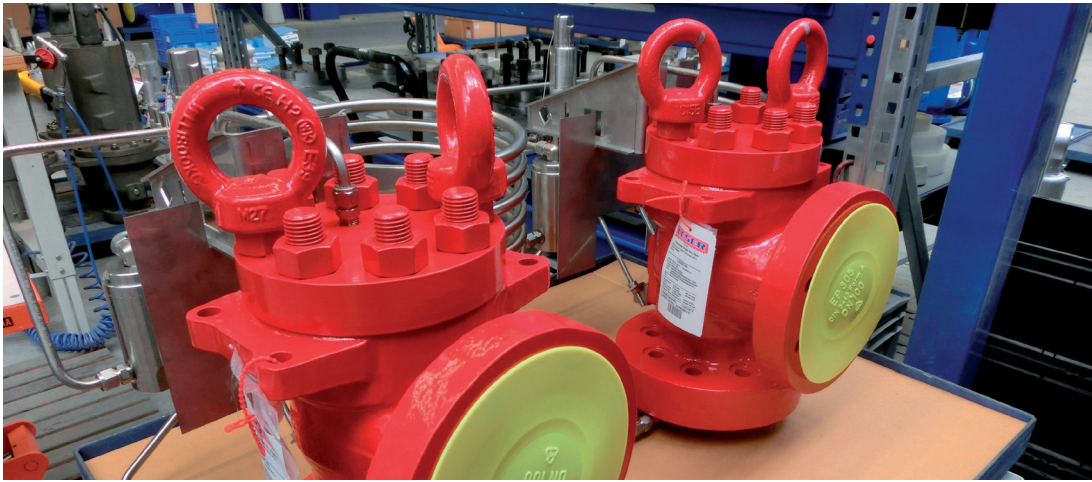
Quantity of LESER valves supplied:

288 safety valves:
6 Type 811, 47 Type 459
and 235 Type 526



LESER

The-Safety-Valve.com



The LESER solution (to be continued): The plant efficiency was supported by the use of pilot-operated safety valves (POSV) in the relevant areas. In contrast to spring-loaded safety valves, they are tight until they respond and thus meet the requirement of a higher operating pressure in relation to the response pressure of the plant. Six POSVs now support the efficiency of LIMUM® technology the liquefaction plant.

The LESER POSV for LNG is based on the proven design for LPG applications - Liquefied Petroleum Gas, which has been in use for many years as a standardized solution.

For the LNG low temperature range, LESER has further developed the design modularly so that it can be adapted to the respective project requirements. In the plant in Russia, for example, an evaporator was used and the pilot was thermally decoupled from the main valve to ensure a gaseous media state in the pilot. A temperature-resistant PTFE compound for piston sealing in the main valve enables the spring-loaded lip seal to be used at operating temperatures as low as -162 °C. The main valve is equipped with a PTFE compound for the sealing of the piston. The special seat bushing design does not require a soft seal in the wetted inlet area. The controlling pilot valve is available with a low-temperature resistant soft seal in Pop Action and Modulate Action versions for various requirements.

LESER's project department supported Linde from the first FEED phase to the commissioning of the project. The production segment "Project Assembly" is specially designed for the requirements of projects and offers optimal conditions for customer acceptance.

Why did the customer choose LESER products?

Linde relies on LESER's know-how in the cryogenic market, for example in projects with temperatures down to -269 °C for liquid helium applications. The company has been working with LESER in the field of technical gases for many years and knows their services very well. The joint experience in the project management of air separation plants and the complete LNG product range, in particular the modular Cryo-POSV in the Pop Action version, were important for Linde.

Advantages through LESER valves

The POSVs allow a high efficiency of the system. At the same time, Linde can be sure that the system is reliably protected against overpressure even under cryogenic media temperatures and adverse external conditions – proven on LESER's own Cryo test bench.

Linde industrial group

The Linde industrial group has been developing process plants for 140 years, including the liquefaction of gases. Linde uses LIMUM® technology (Linde multi-stage mixed refrigerant process). This multi-stage and highly energy-efficient process for liquefying natural gas is specially designed to meet the requirements of small to medium-sized plants.