SUB-X® Submerged Combustion LNG Vaporizers.

24 Sub-X® SCVs installed at a US Gulf Coast LNG import terminal

Vaporizing LNG for over 50 years

Linde Engineering is internationally recognized for its innovative vaporizer systems. We designed and supplied the very first submerged combustion system at a peak shaving regasification terminal in Alabama in 1965, and have installed over 420 LNG vaporizers worldwide.

LNG base load and peak shaving service

SCVs have been put to work in both base load import terminals and peak shaving facilities worldwide.

Base load import terminals typically operate continuously year round. SCVs at these installations can vaporize up to 200 t/h of LNG at nearly 100% thermal efficiency.

LNG peak shaving facilities, on the other hand, operate intermittently, supplying natural gas pipelines during periods of peak need as required. SCVs for this application range in size from 10 to 100 MM SCFD, operating at 93% efficiency.

The technology

SCVs are indirectly fired heat exchangers contained within a single vessel. They are based on the submerged exhaust principle, where burner combustion products are discharged into a water bath, which is then used as the heat transfer medium for vaporizing LNG in the tube coil.

Design advantages

- Quick startup
- Fast response time
- Superior turn down
- High heat flux with low approach temperature
- Average thermal efficiency ranging from 93% to 100%
- Weir, sparger, and tube bundle designs provide high turbulence/recirculation, resulting in temperature uniformity
- No ice buildup on tubes
- Rapid starup and shut down without process upset
- Water bath mitigates process fluctuations during transition periods
- No flame impingement on LNG coils
- Heat exchange medium is water, eliminating the hazards and handling of ethylene glycol or other fluids
- High turndown capability
- Pre-piped and pre-wired stainless steel tank configurations available
- Compact footprint
- Easily integrated with supplemental heat sources

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