

ON-SHORE PROCESS FACILITIES (FTR)



Sector: Oil&Gas

Year: 2010-2012

Place: Kashagan, Kazakhstan

Client: AGICP CKO



OBJECTIVES

In the framework of the Kashagan Development Experimental Program – On Shore Plants 1st Phase – the construction of two twin buildings (North – South), to be used as temporary refuges, was scheduled. In presence of a dangerous atmosphere, the two buildings are able to host up to 300 people, guaranteeing their safety in terms of fire protection, explosion protection and air quality, for a 3 hours time.

The external atmosphere, besides being considered as ATEX Zone 1, IIB, T3, in case of leakage of gases from the process plant, is subject to the formation of hazardous gas mixtures, mainly composed of strongS and SO₂. In order to ensure an elevated safety standard, the whole mechanical system, the instrumentation chain, the access manoeuvres and the operating conditions of the refuges were designed to comply with a Safety Integrity Level (SIL) 2.

The compliance of the safety level with the relative standards was verified during the design process by a third party (DNV).

MAIN ACTIVITIES AND SOLUTIONS

Trillini Engineering was responsible for the design of the HVAC system, ranging from the preliminary study to the detailed design of the components, for the design of the HVAC control board layout, of the electro-instrumental system and of the compressed air distribution plant layout.

The company was also in charge of designing the Fire & Gas installation, the telecommunication system of the buildings and the compressor skid units. TRILLINI Engineering also took care of the suppliers follow-up throughout the whole design process.

Due to the important refuge function of the above mentioned buildings, the whole engineering was verified by Lloyd's Register on behalf of the final client.

Characteristics:

- External operating condition: -36 C to 45 C – RH 100%;
- Corrosive and explosive atmosphere (strongS-SO₂);
- Internal pressurization;
- SIL Assesment;
- ATEX;
- HSSD – High Sensitive Smoke Detection.