SIS – SATELLITE INSTRUMENTS SHELTER 1 – 2 – 4

Sector: Oil&Gas

Year: 2005-2006

Place: Kashagan, KZ

Final client: AGIP KCO

OBJECTIVES

In the framework of the Kashagan Development Experimental Program –On-Shore Plant 1st Phase – four unmanned buildings of the SIS type (Satellite Instruments Shelter) were planned, equipped with Blast andFire Resistant walls. These buildings are meant to contain theinstrumentation and the main switchgear necessary for the management ofan on-shore plant for the preliminary treatment of crude oil, extractedin the northern shore of the Caspian Sea. The buildings are run by theAgip KCO, the main Oil&Gas Kazakh company.
The external atmosphere is classified as dangerous, due to thepresence of corrosive and harmful gases, such as strongS and SO2. This peculiarity requires the presence of a 15 meter chimney in order toguarantee to the HVAC system an explosive-gases-free air intake, and of achemical filtration group for the purification of the inlet air.
To avoid the contamination of the internal atmosphere, the HVAC plantis designed to maintain a +50 Pascal pressure difference with respect to the external atmosphere.

MAIN ACTIVITIES

Trillini Engineering was in charge of the design of the HVAC control board, of the electrical and instrumentation system, of the instrument air distribution plant, and of the Fire&Gas system. Every buildingincluded a battery room, which required the employment of Atex materialfor Zone type 1, IIC, T3, due to the possibility of hydrogen formation.
The Fire&Gas system is mainly responsible for smoke detection, bymeans of optical detectors and air sampling devices (High Sensitivity Smoke Detector Panel). The system monitors the presence of toxic and flammable gas in the inlet air, thanks to dedicated sensors.

Characteristics:

- External operating condition: -36 C to 45 C – RH 100%;
- Corrosive and explosive atmosphere (strongS-SO2);
- Internal atmosphere pressurization: +50 Pa;
- ATEX;
- HSSD – High Sensitive Smoke Detection.