

# iNDUSTRIAL PLANTS

May 2020

ITALIAN ENGINEERING, CONTRACTING AND PLANT COMPONENTS SUPPLIERS



ITALIAN ASSOCIATION  
OF INDUSTRIAL  
PLANT ENGINEERING

Spedizione in abbonamento postale - 45% - Art. 2 comma 20/B - Legge 662/96 - Milano

wood.



*Industrial hose reels for Kuwait (285 pieces)*

## SANCO and the extreme global weather challenge

Being a simple supplier is different from working in complex turnkey construction contracts, while challenging the local climate and geography

**Nico Zorzetto**, Export & Marketing Director, SANCO S.p.A.

Dealing with International EPC-Projects is hard. It is even harder when weather conditions need exceptional requirements on equipment and logistics.

Consequently, you need to:

- have extensive professional and practical experience with large-scale and complex infrastructure projects
- make huge financial and resource efforts due to contractual commitments
- invest in your team by training also commissioning supervisors (sometimes speaking local language) and
- work hard together for reaching goals and on relationship with your clients for accomplishing the specified objectives.

Moreover, at project execution, deviations from desired performance in terms of time, cost and quality easily take place.

At the end, your team's and your client's success is shared with you, and you'll want to empower everyone to succeed and reach their goals so you can reach yours.

High integration and effective synergistic management of projects ensure project quality as long as the results are in compliance with the functional specifications and they achieve the performance guarantees.

During the last decades, thanks also to its R&D department, SANCO has been working for guaranteeing and enhancing the quality level of its products, thus further strengthening the company's position in the fire

suppression systems market.

With its full in-house capability and its human resources - including project engineers, an engineering department (made up of more than 35 highly specialized technicians), which use three teleconference rooms available in SANCO quite often during project development - SANCO has worked by taking in consideration more than a few aspects for planning projects in a very accurate way, in particular the ones located in areas where weather conditions are really harsh.

**SANCO has applied accurately state-of-the-art fire-fighting technologies in very difficult environments, in harsh weather conditions and in remote and almost inaccessible areas**

Various plants on which we have worked are located in remote areas, in some cases inaccessible for most of the year, where the supply of materials and resources to the sites is also a major logistical achievement: sometimes main logistic routes are only rail roads.

These projects have been demanding to reach the following goals:

- meeting the specifications of both EPCs and end users thanks to structured progress reporting and review meetings
- following local authorities in charge for specific local certifications
- considering specific weather conditions, in some



*Deluge valves for Kuwait*



*Special convoy (19 trucks) and trailers*



*Internal view of one deluge valve container for Russia*



*CO<sub>2</sub> systems for Russia (more than 1400 cylinders)*



*Deluge valves on skid for Russia*

cases with very extreme temperatures (-52°C +65°C)

- improving the performances of the fire-fighting systems and equipment accordingly
- granting the agreed delivery schedules and warranties, tailored to meet client's construction needs.

As a result, SANCO has been working and challenging for:

- accurate selection among the end user's

approved vendors of the suppliers of instruments that had to be installed with packages

- identification and choice of special construction materials and alloys that can withstand extreme cold or extreme warm environments, suitable for enclosures/containers (cooling systems for hot environment and heating systems for very low temperatures)
- special welding processes done by qualified welders and with special tests such as penetrant liquids, X-rays, even in presence of external inspectors also during construction process
- assembling with internal final acceptance tests even before visit of EPC's inspectors
- finishing and painting with several cycles, specific painting processes and special thickness
- shipment with suitable logistic means, also special cargo because almost packages reached 30 tons weight each.
- meeting delivery times at site

SANCO has managed voluminous and complex projects but some have turned out to be more remarkable than others.

In particular, it is worth to mention three totally different projects located respectively in Russia, Kazakhstan and Kuwait.

**SANCO has managed sizeable and complex projects in very diverse environments, e.g. in Russia, Kazakhstan and Kuwait**

The projects have been carried out throughout two years by three different project task forces.

In **Russia**, with compact fog clouds over the steppes at the end of the earth, weather is severe cold and polar, with icy winds. Temperatures fall as low as  $-40^{\circ}\text{C}$  or even  $-50^{\circ}\text{C}$ .

For this specific job, SANCO has been requested to design the equipment and select EAC certified special instrumentation for  $-52^{\circ}\text{C}$  as well.

The scope of SANCO has been the engineering, procurement and construction of modular self-contained fire suppression systems (deluge valves, CO<sub>2</sub> gas systems and HFC227ea systems) for a total value of more than 9 million Euros throughout two years.

Low temperature materials have been used for piping and structures to withstand in the cold climate. Since water may freeze, heat traces have been installed at piping and machineries have been placed into special containers with air conditioning systems to prevent possible freezing.

The packages, together with two power generators for granting temperatures not down  $5^{\circ}\text{C}$  in order to avoid any sudden change of temperature during transportation to the site, have been loaded and shipped on board of special oversized cargos in convoys escorted by police.

150 deluge valves have been enclosed into the above mentioned 19 containers.

Additionally, other containers have been delivered enclosing more than 1400 high pressurized CO<sub>2</sub> cylinders of 67 liters capacity / each.

Every container had a weight of about 20-30 tons and, thanks to the rail crane owned by SANCO (able to lift



up to 40 tons), all of them have been easily loaded.

*Deluge valves on skid for Kazakhstan*

In **Kazakhstan**, a significant project has been accomplished by supplying similar systems for a total value of more than 17 million Euros.

The project included:

- 90 skid mounted units with HFC227ea gas systems into insulated and warmed enclosures
- 38 skid mounted units with about 194 deluge valves of different sizes contained into insulated and warmed enclosures
- a big foam pumping station installed inside a large size insulated and warmed prefabricated house
- 2 big storage insulated tanks, each one of 54000 liters capacity
- more than 100 tons of AFFF 3% foam concentrate and 20 tons AR/AFFF 3%. Both the foam concentrates were freeze protected type, suitable for very low temperatures.



*Foam deluge skids for Kazakhstan*

*Foam concentrate storage tank for Kazakhstan (54000 liters)*



SANCO was selected for another noteworthy project by two significant Kuwaiti local oil Companies, namely KOC and KNPC, for a total value of more than 14 million of Euros throughout the last 3 years.

**Kuwait** is a Country where dust and sand storms are common extreme weather events and it suffers from several environmental challenges, including higher temperatures rates, lack of seasonal rains, limited water resources and increased desertification.

Beside the weather conditions, SANCO had to deal with local approvals by the local fire brigade (KFSD).

The Company has supplied more than 80 deluge valves skid mounted in insulated and cooled enclosures suitable for temperatures up to +65°C. Other systems and equipment such as CO2 systems, IG541 systems, hundreds of hydrants, hundreds of monitors, industrial hose reels and many tons of foam concentrate and associated products (nozzles, foam branchpipes, hoses,

breathing apparatuses, windsocks, foam chambers, risers, safety showers, engine suctions and other safety equipment)

The projects have been actually processed on time, with certified approval of inspectors, thanks to the organizational structure and facilities in SANCO. The performances of every single equipment and package have been tested at SANCO's own testing ground by inspectors.

SANCO has managed the projects in an effective way, also while dealing with International transport logistics which needed even more efficient solutions.

Having followed the customer 'satisfaction policy, SANCO has been awarded two good reference letters by its clients for its good job, but it is still ready for new challenges all around the world.



## Nico Zorzetto

Nico Zorzetto, Export & Marketing Director as well as shareholder of Sanco S.p.A., has been working in the fire-fighting field for the last 45 years. Even as a graduate in Economics, he has always been keenly interested in technological innovation for "reliable products".

He has participated in the execution of several new products and systems; in particular he is co-creator of

airmobile fire-fighting systems (fixed type and rotating wing) for the fire-fighting of bushfires. He has published several articles – national and international - relevant to fire-fighting topics.

He also cooperates with national and international organizations and Civil Protection Organizations, as well as with matters of security, e.g. projects with NATO.

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