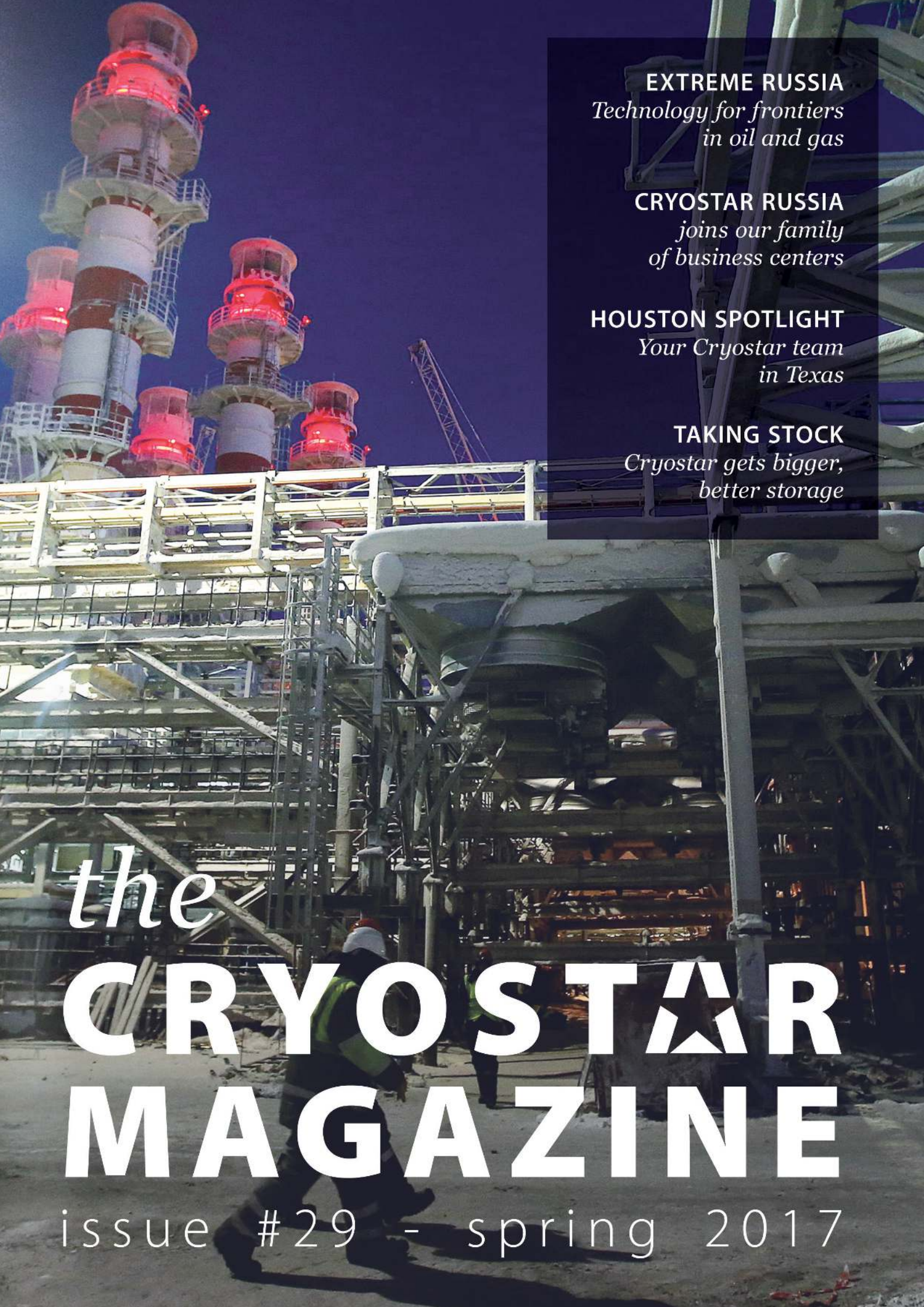

EXTREME RUSSIA
Technology for frontiers in oil and gas

CRYOSTAR RUSSIA
joins our family of business centers

HOUSTON SPOTLIGHT
Your Cryostar team in Texas

TAKING STOCK
Cryostar gets bigger, better storage

the CRYOSTAR MAGAZINE

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edito

Russia is the world's largest country, and recently became the world's leading exporter of natural gas and oil. It is home to 6% of proven oil reserves and has the largest natural gas reserves in the world (17%), with these industries contributing 43% of the nation's revenue. Today Cryostar's role here is growing. We have put the weight of our technical experience behind engineering specialist equipment destined for Russia's exciting and unique energy projects, and have made an even deeper commitment to our customers in the region.

In the heart of Russia's arctic region stands Yamal, a natural gas liquefaction project unlike any other. In a region frozen for up to nine months per year, workers endure a night that lasts for three months. Teams go about their business illuminated by spotlights, in temperatures that can dip to -40 °C. Cryostar staff work here alongside project operators Novatek, to accomplish tough technological goals and reach their prize – the vast natural gas reserves beneath the Yamal peninsula.

A new port and airport at Sabetta bring in over 450,000 tonnes of equipment, among them Cryostar turbines integral to the project. Cryostar has also supplied compressors and heat exchanges for the project's 15 LNG tankers, each with 170,000 m^3 capacities, which will eventually ship the gas to international markets.

Meanwhile in the Amur region, one of the largest gas processing plants in the world will also feature Cryostar turbines. Slated for completion in 2024, Amur gas processing plant (GPP) will be an essential link in the process chain of natural gas supplies to China, via the Power of Siberia gas pipeline.

Of course, these are not our first clients in Russia. Until recently, distributor teams in St. Petersburg and Moscow represented Cryostar. Their collaboration has been invaluable in offering support to our customers.

Now Cryostar has taken the important step to create a new, dedicated business center for the region. Cryostar Russia opened its doors in January in St. Petersburg, joining our family of business centers around the globe, in Brazil, the United Kingdom, the United States, China, Singapore, and India. As well as being a proud moment for Cryostar, we think this is also welcome news for our Russian customers.

We are certain that this proximity will generate even greater responsiveness to our customers, who can expect rapid, high quality and accessible service. We are delighted to establish a presence in the Russian market for all of our product ranges, in both industrial and natural gas. No matter how remote your project or how extreme the conditions, Cryostar staff are ready to support you.

Samuel Zouaghi
PRESIDENT

summary

CRYOSTAR EXECUTES MAJOR PROJECTS FOR RUSSIA

As the largest country on the planet, Russia offers project opportunities of an appropriately vast scale and complexity. With its large oil and natural gas reserves, Russia represents a market with first-rate potential for CRYOSTAR.

Previously, project opportunities had not yielded significant market penetration for CRYOSTAR due to a lack of references in these markets, and also to competition from local manufacturers.

Recently, our sales teams, actively supported by our engineering departments, have secured two major commercial successes for CRYOSTAR as turbine supplier for two projects with various similarities: YAMAL and AMUR are two pharaonic projects aiming to exploit natural gas deposits in particularly demanding natural environments for industrial installations.

Equipment specifications reflect the technical challenges of these projects, challenges that CRYOSTAR and its employees have faced at several levels during project execution. Today, the last turbine of the YAMAL project has been dispatched, and the AMUR project is nearing completion.

THE WORLD-CLASS AMUR GAS PROCESSING PLANT

In January 2016, Gazprom selected the Linde Group and its general contractor for the Amur Gas Processing Plant (Amur GPP). Here in the far east of Russia, Siberian gas fields will supply Russian gas to the Chinese market via the 'Power of Siberia' pipeline. Linde will engineer and supply units for ethane and natural gas liquids (NGL) extraction and nitrogen rejection, as well as for helium purification, liquefaction and storage.

Construction is in five phases, ending in 2024. Phase one includes two ethane and NGL units and a helium production unit, while the following phases will add four ethane and NGL units and two helium production units. When completed, Amur GPP will be one of the largest gas processing plants in the world with a capacity of up to 49 billion cubic meters of natural gas per year. Considering the demanding climate (with temperatures from -52°C to +40°C) and the remoteness of the site, the logistics aspects of the execution are crucial. A river wharf and a 7km-road must be built to even access the site.

CRYOSTAR'S INVOLVEMENT

CRYOSTAR has supported Linde since their bid phase, with a project for generator turbine pre-development. June 2015 saw CRYOSTAR launch a concept study with focus on the aero design and mechanical matters. In October CRYOSTAR met with Linde for a design review to go over the study outputs, i.e. machine layout, thermodynamic design, rotor dynamic design and detailed design of mechanical parts. After this successful concept phase, CRYOSTAR was awarded the purchase orders for the first five turbines by Linde at the end of May 2016, with options for the delivery of repeat units.

THE EQUIPMENT

For each NGL plant, CRYOSTAR will supply two expander/gearbox units (HP + LP units), model TG 500, installed on two separate skids each with a dedicated lube oil system and integral gear box. The HP unit is designed for a cold power of 6.5 MW. For the design of these TG500, CRYOSTAR can draw on a wealth of experience in designing generator turbines: for instance, a TG800 built in 2015 and many TG400 for fertilizer plants. But the AMUR GPP project presents some unique challenges.

To optimize the machinery house, Linde required a minimized footprint for two machines of a given frame size, including the generators (procured by Linde) and the gangway. The challenge for the CAD team consisted in drawing a relatively compact machine.

The Methods and Shipping teams were also involved, starting in the bid phase, for transfer operations within the factory and transportation phases.

For the helium unit, CRYOSTAR will supply a turbo-expander compressor unit equipped with active magnetic bearings (MTC300/110). The process gas is nitrogen: the MTC300/110 is part of the loop that cools down the helium.

A DEDICATED TASK FORCE

Amur GPP is a challenging project, considering the number of units, the time frame and the applicable local norms (see box "Delivering to EACU countries"). Therefore, the Process Machinery Business Unit has initiated a project task force to execute the Amur GPP project.

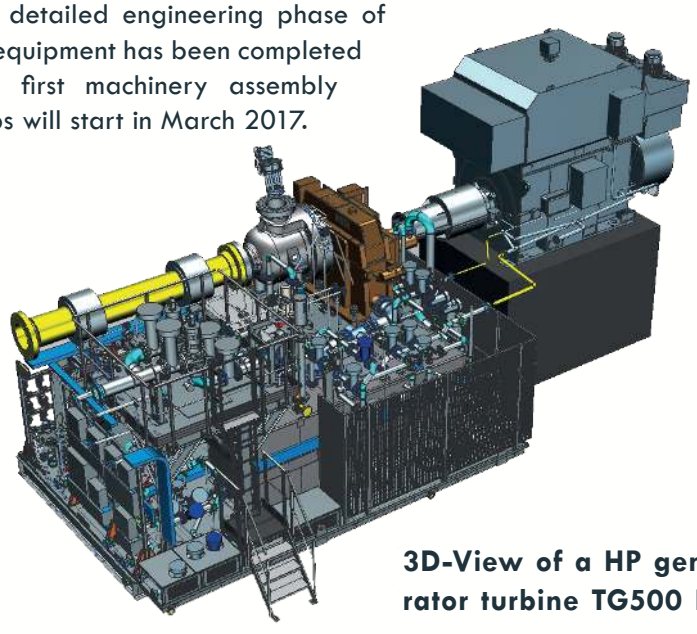
The following disciplines are represented in the task force: project management, product quality management, instrumentation & control engineering, auxiliary system engineering (including documentation) and purchasing. In addition to the task force, other departments such as aero-engineering or supply chain (scheduling, and procurement) are essential contributors to the project. Task force members are located in a dedicated area of the Engineering Office, for improved information flows.

This project requires very tight cooperation with Linde Engineering, based on regular phone conferences and face-to-face meetings. A team representing the end user's contractor is also based at Linde Engineering in Munich and attends project meetings.

The testing scope is extensive, including a test with loaded gearbox with assembled tandem dry gas seals for the TG500. We will also perform de-levitation tests on the magnetic bearing expander MTC300.

ON SCHEDULE

The detailed engineering phase of all equipment has been completed and first machinery assembly steps will start in March 2017.



3D-View of a HP generator turbine TG500 HP

YAMAL LNG: ANOTHER SPECTACULAR PROJECT

It is at Sabetta, 2,500 km from Moscow, 600 km from the Arctic Circle, in Russian Arctic Siberia, that the giant Yamal LNG project comes out of the ground - or rather ice.

With its partners, the Russian companies Novatek and Chinese CNPC, the French oil and gas company Total operates a mega gas field on these arid lands and is building a factory where the gas will be liquefied by cooling to -160°C so it can be transported by ships. Within three to four years, this deposit will produce 27 billion m^3 of gas and 16.5 million tonnes of liquefied natural gas (LNG) per year - the equivalent of two thirds of France's annual LNG consumption.

In 2014, Technip selected CRYOSTAR to supply three turbines for the Yamal LNG project. The Yamgaz SNC consortium placed the order, and Technip was in charge of the engineering and construction phase. CRYOSTAR was also selected at the same time to supply the compressors and heat exchangers that would equip the project's 15 LNG tankers: a world first in LNG transport.

Although 15,000 people are present on this huge project, the factory is built in the form of more than 160 modules, to avoid having even more staff working at these high latitudes (and to manage the necessary infrastructure and logistics). Modules have been manufactured in ten shipyards in China, Indonesia and the Philippines, before being transported by boat to Sabetta and assembled on site.

CRYOSTAR expansion turbines were transported in three separate shipments by sea to Quingdao, China. Even with specially strengthened vessels used to transport these modules, their passage had to be facilitated by icebreakers. It was also necessary to build the harbor, to dredge the estuary of the Ob, which was not deep enough, and to build jetties.

PROJECT STATUS

CRYOSTAR teams were prepared to carry out a complex project due to harsh environmental conditions, regulatory requirements and the level of quality requested by our client Technip on behalf of Yamgaz. Our team carried out risk analyses at the beginning of the project, and further strengthened the level of requirements and the scope of supply, to include tracing, auxiliary piping insulation, and low temperature insulated boxes for the instrumentation.

Skid manufacturing was itself a challenge since we needed to qualify a new supplier capable of meeting welding standards, using "low temperature" materials (the design temperature being -50°C), all in a record time.

Custom Union country regulations (see insert) have evolved during the implementation phase. CRYOSTAR teams had to be very responsive to understand and enforce these new regulations (also by our suppliers). In the end, this certification aspect proved to be a major challenge, which we overcame with the support of our Auxiliary Systems and Instrumentation & Control engineering departments.

Procurement and assembly phases also presented challenges.

The production process of the expander/compressor wheels with a diameter of 600 mm alone requires a significant amount of time if one includes the machining of the shaft to wheel connection, the surface coating, the holographic test and the over speed test. We integrated comprehensive tracing and insulation of the auxiliary piping into an already heavy manufacturing schedule. We also performed noise measurements to meet the specified requirements.

For the customer to validate that our products met their specifications, thirty inspection steps marked the manufacturing phase. The test phase went smoothly, and our customer validated the performance without reservation. We then shipped the CRYOSTAR turboexpanders to China, where they were integrated into modular structures to reduce on-site construction activities.

The commissioning phase is forthcoming and will also represent a challenge despite all the preliminary tests and integration into modules, since the equipment is installed outdoors.

Delivering to Eurasian Customs Union (EACU) countries

Delivering equipment to the countries of the EACU involves complying with many mandatory directives in connection with customs requirements and equipment commissioning. These Russian directives are called Custom Union Technical Regulation (CU TR). The Custom Union includes various countries that have adopted these regulations (Russia, Belarus, Kazakhstan, and Armenia). Today, these guidelines are considered from the point of view of quality as being the most restrictive, complex and demanding in terms of audits (carried out by the Russian authorities for example) of all oil and gas industry markets.

To obtain CU TR certificates of conformity, we are obliged to work with recognized third party entities that will deal directly with the authorities of the Russian Customs Union responsible for issuing these certificates. Such documents are essential for the clearance and authorization to operate the equipment.

Yamal LNG was, for CRYOSTAR, the first project affected by these new directives, as well as for third parties, because these directives came into force in 2014. While we were working on these new guidelines, external project contributors (suppliers, third parties) needed to familiarize themselves with our products and to define the applicable guidelines. This first project allowed us to clarify the scope of supply covered by these directives and the associated certifications.

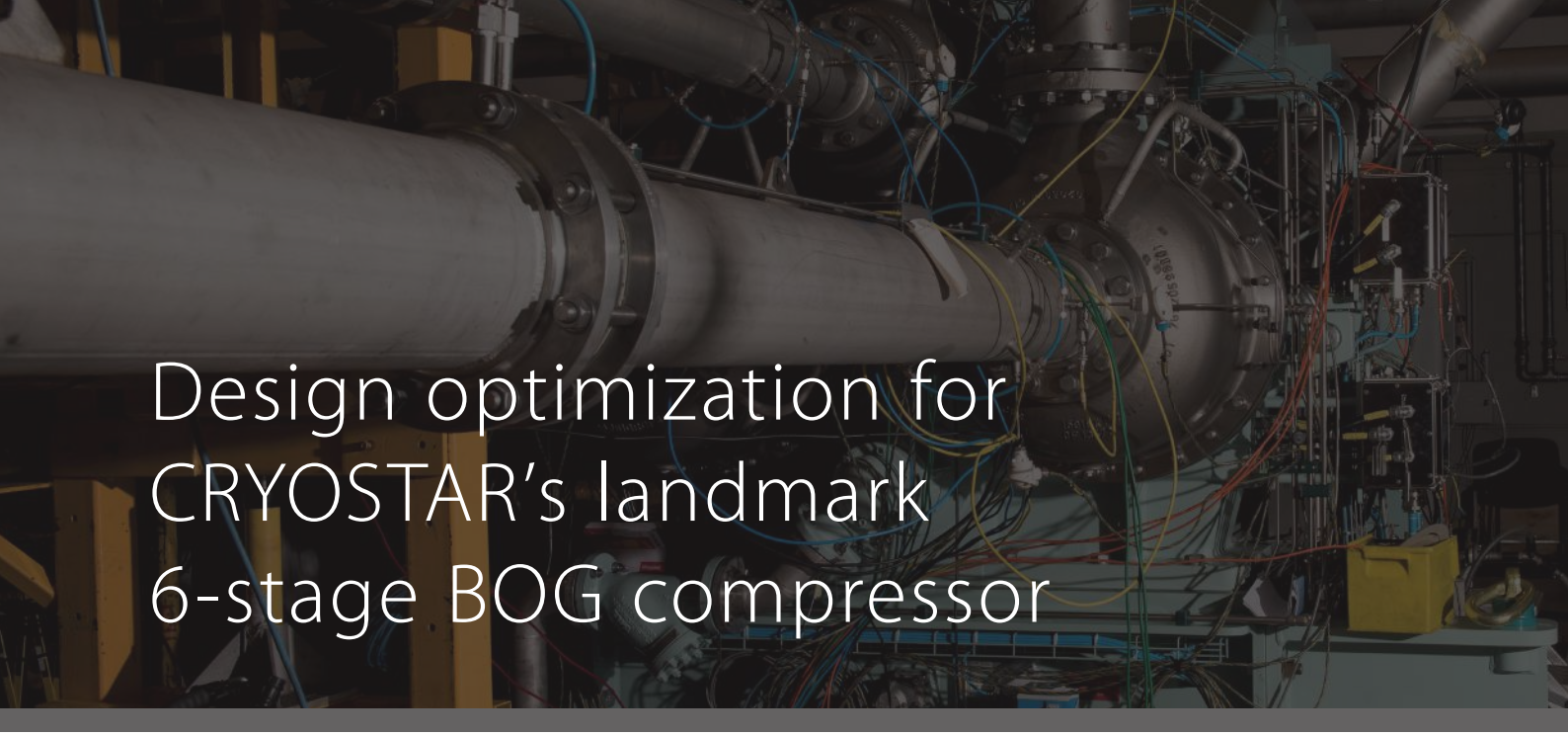
With the experience of this first project, CRYOSTAR decided to generalize its series certifications. These have the advantage of covering a whole range of products for five years, rather than just a single project as was the case on the Yamal project. This eliminates the risk of additional delays associated with the certification process.

Today, CRYOSTAR can offer its customers an entire range of pumps, which is certified CU TR 010 and CU TR 020. The range of MTC turbines is certified CU TR 010, -020 and -012.

CONCLUSION

These two projects highlight CRYOSTAR's ability to support clients in the study, implementation and finalization of complex projects in the oil and gas industry. These are also emerging references for CRYOSTAR in the Russian market, with obvious potential given oil and gas resources of this territory.

Finally, the opening of our Russian Business Center in St. Petersburg is an additional asset. The proximity between users of our machines and the development of service activities will be necessary to further consolidate the CRYOSTAR brand in these markets.



Design optimization for CRYOSTAR's landmark 6-stage BOG compressor

Internal tests of CRYOSTAR's new 6-stage boil off gas (BOG) compressor revealed an unforeseen challenge with the seal sleeve design. A team of CRYOSTAR's highly qualified engineers and technicians immediately set to work to overcome this challenge, with an extensive test campaign and a new, improved seal sleeve. This paved the way to a successful first Factory Acceptance Test (FAT).

The global merchant marine industry is always on the lookout to improve vessels' fuel consumption and reduce its environmental footprint. Never content with the status quo, engine manufactures strive to commercialise new products to help the industry meet those goals. In recent decades CRYOSTAR has closely followed these developments and adapted its boil-off gas (BOG) treatment product portfolio to engine manufacturers' needs. This continuous innovation process has seen CRYOSTAR establish a large installed base of 2-stage and 4-stage BOG compressors to fuel 4-stroke TFD engines on-board LNG carriers. When Wärtsilä (now WinGD) introduced its new low pressure low speed 2-stroke dual fuel engine for LNGC propulsion, it was only natural that CRYOSTAR would step up to innovate, offering yet another product to treat BOG and make it available for the ship's propulsion engine. And so the 6-stage BOG compressor to fuel 2-stroke engines was born.

PUSHING THE ENVELOPE

In the early stages of development, CRYOSTAR's engineers quickly realised that they had to push the boundaries beyond the envelopes established for 2-stage and 4-stage BOG compressors. There are two key reasons:

1. The 3rd high-speed shaft of the 6-stage BOG compressor operates at over 45,000 rpm

2. The 6-stage BOG compressor's outlet temperature reaches over 195°C when operating on-site

TESTED TO THE LIMIT

After an intense design, manufacturing and assembly cycle, CRYOSTAR tested the first 6-stage BOG compressor in the world-class test facility at its headquarters in Hésingue, France. In addition to carrying out performance tests in accordance with ASME PTC10, our engineers conducted a dedicated mechanical running test with stages C5 and C6 inter-connected and the first four stages (C1 to C4) running with individual inlet and outlet connections. This configuration led to slightly more stringent test conditions than those experienced on-board the LNG carrier. With measured discharge temperatures of stage C6 above 200°C, the tests uncovered a shaft seal sleeve weakness on the 3rd high-speed shaft. At an operating speed of 95% of the nominal speed, the vibration level increased suddenly, causing the BOG compressor to trip. The dismantling inspection showed evidence of damage to both carbon seal rings, and the shaft sleeve.

Our designers kept the clearance between the carbon seal rings and the shaft sleeve purposely at a very low value during the design stage, to minimize seal gas consumption on-board the LNG carrier. The high rotating speed of the 3rd shaft caused a shear flow in this small gap, with corresponding friction-generated heat.

The team decided to launch an in-depth measurement campaign, using special temperature measurement devices to better understand the effect of this shear flow on the shaft sleeve. Their results showed that the shaft sleeve experienced temperatures at the wheel side between 225°C and 245°C, values higher than initially predicted during the design phase. CRYOSTAR's engineering team decided to strengthen the design of this shaft sleeve by using a different material, which features a 45% higher limit of yield strength at 250°C.

Our team also slightly upped the clearances between the shaft sleeve and the carbon ring seal, reducing the effect of the sheer flow while maintaining the seal gas consumption below the guaranteed value.

This avoids impacting the capacity of the on-board nitrogen generator.

August 2016 saw the redesigned 6-stage BOG compressor undergo yet another stringent internal test. This time the discharge temperature of the 6th stage was maintained at 205°C throughout a four hour mechanical running test with the machine operating at full speed. The test proved that the improved shaft sleeve design was reliable and robust. During these tests the high-speed shaft vibrations of the 3rd shaft were measured at values well below the alarm threshold set at 30 microns, and were very stable.

During the subsequent FAT in early September 2016, CRYOSTAR fully validated the two 6-stage compressors in the presence of shipyard, class and owner. "Our measurements for all parameters including vibration, bearing temperature and seal gas consumption were found to be fully satisfactory," said Nicolas Ueberschlag, Project Execution Team Manager at CRYOSTAR. After the mechanical running test, our engineers dismantled both machines to check the state of the sealing sleeves. No wear was observed and dimensional checks did not reveal any deformation of the parts. With the new design validated, machines were shipped on-site in preparation for the gas trial that our personnel will assist with in Q2, 2017.

CELEBRATING 50 FANTASTIC YEARS

It's official – CRYOSTAR has been with us for half a century. CRYOSTAR marked this unique occasion with both ceremony, and celebration.

Turn back the clock 50 years, and you could have witnessed CRYOSTAR AG's official entry into the Register of Commerce in Switzerland on October 14, 1966. This exciting new company was a 50:50 joint venture between Burckhardt, a company from Basle, Switzerland, and Airco, one of the leading air gas companies in the US. To celebrate the anniversary, CRYOSTAR staff and retirees, as well as several personalities from the world of politics from Mulhouse and Southern Alsace, gathered at a ceremony on 21 October 2016 in the nearby city of Saint-Louis.

Launching the festivities, our President, Samuel Zouaghi, talked about his first days at CRYOSTAR, back in 1995. He underscored the tremendous growth of the company with a turnover multiplied tenfold and employee numbers tripled in just twenty years. A success achieved thanks to the commitment of our personnel and a deeply embedded corporate culture and values.

A STORY OF INNOVATION

CRYOSTAR's genius for innovation has seen hundreds of technical improvements and new applications during our 50 years. Zouaghi concluded with a message to personnel: "it is up to each of us to make every moment of the present of CRYOSTAR, of which we are actors and

authors, a story of which we can continue to be proud!" Daniel Meyer, former President, and David Marcelin, TV journalist, regaled everyone with a whistle-stop tour of highlights from our first 50 years. Meyer explained that in the end, a company has its own destiny with each event and decision strongly influencing its future.

The presentation also gave us a tour of products no longer in the CRYOSTAR product portfolio, namely food freezers, large submerged pumps for hydrocarbons and mixmakers (which mix gases for deep-sea divers).

Next, a magician delighted the crowd, with some CRYOSTAR staff even taking part in the tricks. A memorable evening; rounded off perfectly with the opportunity to mingle and share anecdotes over a cocktail.

EVENTS THAT CHANGED THE COURSE OF CRYOSTAR'S HISTORY

- The 1972 decision to extend our activity and to establish a company in France, which later became the main centre of operation.
- Later, in 1983, The BOC Group decided to sell the US entity Airco Cryogenics and to keep CRYOSTAR, which became BOC's leading pumps and turbines manufacturing operation.
- In the early 1990s French shipyard Chantiers de l'Atlantique ordered compressors and heat exchangers to equip five LNG carriers for Petronas (Malaysia). This order launched CRYOSTAR successfully into LNG in the all-new 21st century.
- 1997 saw CRYOSTAR close its Swiss entity and to move all activities to Hésingue, France.
- In 2002 CRYOSTAR China opened its doors, giving us a slice of the growing industrial gas business.
- 2006 saw CRYOSTAR win of the order for re-liquefaction units for an impressive 14 Q-Max LNG carriers, to supply both the process and the machinery.

STOREROOM UPGRADE SET TO RE-ENERGIZE SUPPLY CHAIN

We'd all like to be well organized and find ideal storage solutions, and CRYOSTAR is no exception. This year will see a major overhaul of the Supply Chain department. Despite the challenges, stockroom restructuring and operational re-organization with yield significant benefits, including optimized customer service.

PLANNING AHEAD

The end of 2015 saw CRYOSTAR take the decision to invest €1.2 million in extending and modernizing its storeroom. Improved safety for our team and our stored parts, and better processing efficiency were key goals. Today, the store team works in a cramped environment, shared between workers, carts and pallets. Non-optimal workflows increase the risks of accidents and lost time. Despite recent investments in new cabinets, in truth our activities have outgrown our storage capacities. "To face current and future challenges, it is necessary to rethink the organization of the store with a scalable solution," says Eric Lenhardt (Storeroom Manager).

CAPACITY EXPANSION

Our team is now able to reveal the details and timing of our expansion project. Front and rear extensions adding 457 m^2 will be work areas. The current building (Hall 6), with an area of 1220 m^2, will be designated storage only; we will partially remove storage racks and replaced them with automated storage systems, optimizing the available space. Openings created in the siding of the current Hall 6 will link the buildings. With close to 30% increased capacity, we will be able to bring in some 500 pallets of stock located at our logistician.

To keep software standardized the new solution will be supported by current stock management software (Copilot).

Automated systems will optimize flow and crossing and will incorporate ergonomic workstations. Receptions and preparation areas will remain cart-free to ensure the safety of warehouse operators.

The expansion is slated for spring 2017, with the rear extension first, with completion of the project due at the end of 2017 when we will implement the automated systems. We will make temporary arrangements for our suppliers and rely on our logistics partner to store some of our parts.

Our dedicated team is committed to keeping things moving during the upgrade. Optimized organization, superior storage space, reduced delivery times and satisfied customers will make it all worthwhile.

AT A GLANCE

- Rear extension (320 m^2) devoted to preparation and shipping
- Front extension (137 m^2) dedicated to arrival. Parts transfer to production from the rear extension to the workshop, requiring the creation of an opening between the existing building and this extension.
- Hall 6, current arrival area will be dedicated to outsized parts storage. Remaining storage racks in the center will receive pallets for the heaviest or less used parts. Two tri-directional carts will be retained, or modified. Automated storage systems will integrate fairly heavy and average-sized goods.

CRYOSTAR HOUSTON
HITS THE GROUND RUNNING

Houston, Texas is a major US powerhouse in the energy sector, boasting significant operations for building and exporting oilfield and gas equipment and a growing role in the renewable energy sector, too.

It's no surprise that establishing a location in Texas was always part of CRYOSTAR's strategic plan for the US, it has been a waiting game to pick the perfect timing and opportunity.

The moment finally arrived in 2014/2015 with the growth of CRYOSTAR USA's hydrocarbon market business, along with a critical mass of machines operating in the Gulf area.

October 2015 saw the CRYOSTAR facility in Houston officially opened.

"*Texas is important to CRYOSTAR both due to its proximity to our major customers and equipment installed in the Gulf region, as well as for its geographical location in the USA, complementing the other locations in California and Pennsylvania,*" said **Mark Sutton, Business Center Manager, North America**

Specifically selected and outfitted as a repair center with assembly capabilities, the facility boasts 8,000 ft^2 (745 m^2) with a shop area equipped to service the large machinery operating in the region, including an overhead crane.

A full stock of spare parts is always on hand, along with service exchange equipment available to ship at short notice. Houston is home to a sales key account manager, customer service support staff and technicians based both in the workshop, and available to travel on site. To allow the facility to 'hit the ground running,' some key staff transferred from the California location and form the core of the new and expanding team in Houston.

Within weeks of opening, CRYOSTAR Houston serviced a number of large turbine expander units, trailer pumps, process pumps and piston pumps for local customers. CRYOSTAR USA now looks forward to serving its US-based customers with further expander packaging projects as well as full repair and on-site services, all provided out of the new Houston location.

TERRIFIC TEAMWORK

Always ready to push the limits, in addition to the initial ramp up of repair activity, CRYOSTAR also selected the Houston shop as the location for the first in-house packaging of a 2TC200/45 turbine expander unit. Working as a carefully coordinated team, staff from the French and US offices carried out the design, specification and US sourcing for the skid and auxiliary systems such as the oil tank, oil cooler, oil pump and electrical controls. After manufacture and successful testing of the rotating assembly at the state-of-the-art CRYOSTAR test facility in France, the machine was transported to Houston for integration onto the skid system.

During manufacture and testing of the machine by the French team, the US team had carried out the sourcing and project management of the skid system, meaning that once the machine arrived, everything was ready for the mounting and installation of the machine directly onto the skid. Thanks to the attention to detail and close collaboration of the project teams, integration and final inspection of the machine went smoothly and the work was finished according to plan.

news

Chlorinated degreasing upgrade for Hall 7

Following a decision to increase our degreasing quality for large parts, Cryostar invested a total of €440,000 to purchase and install of a new degreasing machine.

This machine will allow degreasing of the pump casing, the welded supports, the spirals and all the large parts entering the degreasing chamber.

The machine can accept loads: 1.240 x 835 x 970 mm (L x W x H)

New compressor for turbines test bench

Cryostar invested a total of €300,000 in a new compressor for its turbine test benches.

The model chosen is a compressor C1000, which features three compression stages, with the air outlet temperature regulated from 25 to 130°C.

The C1000 features a flow rate that is pressure-adjustable from 2.5 to 10 bar(g), and a nominal point of 10,935 Nm^3/h at a discharge pressure of 9 bar(g).

These two new investments will be made available to production at the end of the first quarter of 2017.

Cryostar signs large-scale maintenance agreement with Air Liquide France Industrie

Cryostar and Air Liquide France Industrie (ALFI) have signed a maintenance agreement for all pumps installed on ALFI sites.

This means that the pump installed base on Air Liquide's French production sites will benefit from both scheduled and curative maintenance.

With objectives such as quality, deadline compliance and optimal equipment availability, Cryostar will do its utmost to ensure that its equipment achieves post-maintenance "zero failure" on-site.

BRAZIL

CHINA

FRANCE

INDIA

RUSSIA

SINGAPORE

UNITED KINGDOM

UNITED STATES

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