

Panorama CPC



CJSC Caspian
Pipeline
Consortium-R



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Consortium-K

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**Cover
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Toward Higher Shipping Volumes

COMPREHENSIVE TESTS OF THE THIRD SINGLE POINT MOORINGS (SPM-3) HAVE SUCCESSFULLY COMPLETED IN THE SEAWATERS OF THE CASPIAN PIPELINE CONSORTIUM (CPC) MARINE TERMINAL LOCATED NEAR THE PORT OF NOVOROSIYSK. THE TESTING PROGRAM INCLUDED CRUDE OIL LOADING ON A TANKER. NOW, SPM-3 IS READY FOR COMMISSIONING FOR PILOT OPERATIONS.

This calls for celebration

The 157,500 DWT EURO tanker, which was built less than one year ago and sails under a Bahamian flag, was moored at SPM-3 on August 16. Following an auxiliary process of water replacement from the third underwater flowline, the tanker owned by the largest Greek ship-owner in the world, TSAKOS SHIPPING AND TRADING S.A., was loaded with 135,500 t of the CPC Blend crude oil.

The milestone event was attended by CPC General

Director Nikolay Brunich, Deputy General Director for Engineering and Projects William Simpson, Marine Terminal Regional Manager Alexander Krichun, Director for the Expansion Project of the Caspian Pipeline Consortium Marine Terminal and the Control Systems of Chevron Neftegaz Inc. Kevin Nance and Novorossiysk Mayor Vladimir Sinyagovsky.

Quite far from the shore

Tankers at the terminal have been loaded until now via two SPMs which allow lifting oil at a distance from the shore, even when weather conditions are unfavorable.

An SPM is a floating facility fastened to the sea bed with six anchors weighing many tons and a bottom flowline connected to it. After mooring, the tanker crew connects the SPM's flexible hoses to the tanker's manifolds. While being loaded, a tanker can revolve freely around the SPM driven by winds or currents.

As of today this method of tanker-loading is the most environmentally friendly and safe one, which is why it is used in the leading cargo ports of the world. In Russia, similar mooring facilities exist only on Sakhalin. The Novorossiysk SPMs are, however, installed further from the shore, with the sub-sea crude pipelines laid almost twice as deep (56-58 meters).



Each SPM is designed and manufactured specially to match regional features and sea bed topography. According to specialists' calculations, the Novorossiysk SPMs are capable of weathering the worst storms recorded in the region over the last 100 years.

What makes it so unique?

SPM-3 is a submerged turret buoy featuring an improved design compared to its predecessors, which included turning pads. Its key advantage lies in the buoy body's revolving capability. Thanks to its low center of gravity, the buoy is very stable and more easily and safely accessible. All mechanical and electrical equipment is located in the watertight deck premises, which makes SPM maintenance simpler and more convenient. Heavier body serves to reduce the impact load generated by the vibration of the mooring line onto the main bearing, thus extending its service life. Also, the bigger mass (362 t) helps to reduce the loads generated during the buoy-tanker contact, the so-called "kissing".

SPM-3 was manufactured at shipyards in the UAE and delivered to the port of Novorossiysk a year ago on the cargo deck of a unique transportation vessel, the Atlant Frauke. After the completion of the fairly complicated work of laying a third underwater flowline with the help of the Crawler special barge, the SPM was towed from the Marine Merchant Port to the CPC Marine Terminal where it was stationed at a distance of 5.6 km from the shoreline, offshore from the village of Yuzhnaya Ozereyevka.

Two Plus One

During the period of the Tengiz – Novorossiysk crude pipeline operation over 326 mln t of



Terminal seawaters in full view

Kazakhstan and Russian oil had been loaded from the current two SPMs, including 30.6 mln t lifted last year. The commissioning of SPM-3 is a milestone of the Project to expand the throughput capacity of the Tengiz – Novorossiysk pipeline system, allowing for significant increase of the crude oil shipment through the CPC Terminal and bringing it, after the completion of the Project, to the planned 67 mln t per annum, and up to 76 mln t with the injection of drag-reducing agents.

It is now possible for the Marine Terminal to receive two tankers at a time, while one of the three SPMs is under maintenance.

What is most important

The Consortium's performance indicators have never exceeded the industrial safety, health protection and favorable environmental situation within the Marine Terminal – on the Black Sea shore.

As CPC General Director Nikolay Brunich noted at the ceremony

on the occasion of the first tanker-loading at SPM-3, the commissioning of the new single point mooring would in no way affect the environmental balance



Getting well-deserved honors!

at the holiday resort that is a favorite among Russians.

In his turn, Novorossiysk Mayor Vladimir Sinyagovsky stressed with satisfaction that throughout the period – since the completion of the construction and subsequent operation of the CPC Marine Terminal – the Company had never once allowed a situation to occur which could have brought with it undesirable environmental consequences.

The accident-free operation of the Terminal is the result of both the use of state-of-the-art technologies and equipment, and the high culture of operation and labor safety. It stands to reason that the CPC Marine Terminal has become the three-time winner of the "Oil Terminal" International Prize in the "Best Process Equipment", "Reliable Partner" and "Stability 2012" nominations. The Terminal team wishes "fair seas and a following wind" to all tankers, including those now serviced at SPM-3. ■

*Igor Vinogradov
Photographs by: Mark Plakhtiya*



Mikhail Barkov:

«The multinational CPC team can handle any challenge!»

Dear colleagues!

Let me congratulate you on our professional holiday, the oil and gas industry workers' day. OJSC AK Transneft and I would like to wish both the young and the experienced members of the CPC team to be successful in solving the many difficult tasks set before the Consortium, the first of which will be executing the large-scale Expansion Project construction plans. Behind all our accomplishments there is always the ordinary day-to-day work of the Company's staff and CEOs, and all of them are highly qualified and united in their desire to move forward.

Whether at pumping stations or the marine terminal, in the office or design center – no matter where our industry experts work, each and every one of them has the right to be proud of his or her

involvement in our common task of great importance, the operation and expansion of the transportation capacity of CPC's unique oil pipeline system. I'm convinced that the united multinational CPC team can handle any challenge and overcome any difficulty that it may encounter.

Once again I would like to wish happiness, success, health and prosperity to all the Consortium employees and their families. Dear colleagues, let your homes be filled with love and your lives full of pleasant surprises!

I'm convinced that for many of you working with CPC and taking part in the Expansion Project will become a memorable life experience that can bring promotion, provide material well-being and contribute to professional growth.

Friends, accept my compliments on this Day of oil and gas industry workers! ■



Retrospective: CPC shareholders making a final decision on investing Tengiz – Novorossiysk crude pipeline project on December 15, 2010



Nikolay Brunich:

"It's our day!"

THIS HOLIDAY MAY NOT BE A RED-LETTER DAY AND IT MAY NOT BE IN THE STATE HOLIDAY CALENDAR, BUT THE KEY ISSUES HANDLED BY OIL AND GAS INDUSTRY WORKERS ARE OF VITAL IMPORTANCE FOR THE COUNTRY'S SOCIAL AND ECONOMIC DEVELOPMENT.

Dear colleagues and friends!

This issue of the magazine is published right before the oil and gas industry workers' day, a wonderful holiday that is traditionally celebrated on the first Sunday in September. It is our professional holiday, the holiday of hundreds and thousands of people of all ages and nationalities, the holiday of all those who work in the vast system of the Russian fuel and energy complex. This holiday may not be a red-letter day and it may not be in the state holiday calendar, but the key issues handled by oil and gas industry workers are of vital importance

for the country's social and economic development.

According to tradition, this day will witness many congratulations, awards, flowers, meetings of colleagues, partners, veterans and just friends. Many kind and cordial words will be said towards those who are on duty in the cold and wet tundra, in the dry steppe and hot sands, in the arctic and tropical seas, towards those who make the continuing service of millions of pieces of equipment and plant units possible.

I'm sure that over and over again the names of those people who contributed to the formation and development of the former Soviet oil and gas industry will be remembered. Many people will recall the distant years of the 1970s-1980s when geological exploration and reservoir management was conducted

on a huge scale, as well as the hardships of the 1990s when we literally had to work to survive in the attempt to preserve what had been built-up over decades.

We should show our appreciation of those people who didn't leave the frontline during such rough times and didn't join the ranks of the "suitcase traders", those who managed to preserve their experience, professionalism and traditions, those who are sharing all this now with the new generation of Russian and Kazakh oil and gas industry workers.

The new generation of fuel and energy complex specialists deserve to be mentioned separately, since this is a burning issue that we are concerned about even on this festive occasion. The past stays in the past, but what about the »





present and future? The veterans can't help wondering who is going to replace them, and whether they will have sufficient knowledge?

Will those new people have the same spirit, romanticism and keen interest in everything new that is connected with this profession? I would sincerely wish to believe that a pleiad of brilliant, highly educated and technically literate specialists will fill in the gap in personnel brought by ongoing changes. Can it be any other way? We still have our great oil and gas industry staff training school, we have wonderful motivated youth, and we have plans and goals. What else do we need to feel confident about the future?

And to those who have made their decision about their future vocation and who are going to celebrate this holiday for the first time, I'd like to wish them to become true experts in their field.

As far as our company is concerned, it is a just a minor link in a grand fuel and energy mechanism. But all of the



Back in the 90s

aforesaid can be fully attributed to the CPC team. We have our traditions, our veterans, our high-grade specialists and our promising youth. The position of the company and its rating on the Russian and world oil and gas market depends on how quickly and effectively we can attain the long-term production targets we have set. After six months as CPC Director General I can be confident that we have everything for the successful execution of the programs agreed by our shareholders.

The most important thing is to strive towards the final result, give all you have to the common goal, and be fully in



Part of the history...

charge in your own area of work. In conclusion, I want to congratulate on this oil and gas industry workers' day not only the readers of "CPC Panorama", but everyone connected with and working in the fuel and energy complex. I hope you stay loyal to your profession, respect your team members and friends, help the young in their work and listen to the advice of the veterans, keep and follow the traditions of our predecessors and be professional in your field. And, of course, I wish you all health, prosperity and domestic harmony. ■

*Nikolay Brunich
CPC Director General*

CPC PEOPLE

THERE ARE SO MANY SIDES AND ASPECTS TO THE OIL INDUSTRY. ASK AN OGCF DRILLER OR A MARINE TERMINAL OPERATOR, A PS OPERATOR OR A CHEMICAL ANALYST, A WELDER OR AN EXCAVATOR OPERATOR, A DRIVER OR AN IT SPECIALIST, AN ECONOMIST OR A PARAMEDIC, A COOK OR A STAFF JOURNALIST WHAT IS THEIR JOB, AND THE ANSWER WILL BE THE SAME – OIL & GAS. AT THE END OF THE DAY WE ARE ALL IN OIL & GAS, EACH OF US GIVING THEIR ENERGY, KNOWLEDGE AND TALENTS TO THE DEVELOPMENT OF OUR OWN COMPANY. TODAY WHEN CPC PIPELINE SYSTEM IS BRANCHING OUT, BOTH OPERATORS AND MULTIPLE CONTRACTORS ARE WORKING AS A SINGLE ENTITY INSPIRED BY THE MUTUAL GOAL OF IMPLEMENTING THE EXPANSION PROJECT. AND IT WILL COME TO PASS!





William Simpson: «Let's Make Expansion Project the Safest Project in Russia and Kazakhstan!»

ON THE EVE OF OILMAN'S DAY, WILLIAM SIMPSON, DEPUTY GENERAL DIRECTOR, ENGINEERING AND PROJECTS, AGREED TO ANSWER QUESTIONS OF THE CORPORATE MAGAZINE.

– Dear Mr. Simpson, On September 1 Oil Industry staff in Russian and Kazakhstan will traditionally celebrate our professional day. What words of greetings, wishes would you like to share on this occasion with OJSC CPC-R and JSC CPC-K through a publication in «CPC Panorama» corporate magazine?

Let me start by saying “Happy Oilman’s Day to everyone, men and women alike.”

I recognize this is an important industry for Russia and Kazakhstan and it is good to recognize the people who

contribute to that industry especially people in CPC. We should be proud to work in this industry; it is a crucial part of the development of Russia and Kazakhstan, and in CPC. I think it is a good opportunity for all the employees in CPC to learn about the oil business. We are in the oil business, we pump oil every single day and it is a benefit for everyone who works here whether you a manager or a translator √ to understand how CPC works and learn and understand the oil business.

– What Team’s accomplishments would be worth mentioning in «CPC



Panorama» issue dedicated to Oilman's Day?

The first thing and most importantly is the safety accomplishments we have achieved both in Base Business and Expansion achieving exceptional safety results this last year. I think this is accomplishment that everyone can be proud of. That is unique in the industry for an Operations and a Project like this to have a safety program that we can be proud of.

Second of all, I would like to recognize the teamwork that we are developing within CPC with people from different countries, people with different backgrounds, people with different experiences being able to work together to make CPC efficiently and also to start to achieve accomplishments within the Expansion Project. I would like to recognize everyone for the teamwork that they are achieving to meet our goals.

Thirdly, we have done a great job successfully accomplishing the upgrades and shutdowns we have had over the last year, doing this without incidents, and with required quality. That again shows good teamwork by everybody and good focus on

achieving the desired results. As you know shutdowns are very important for Expansion Project, they give us an opportunity to tie-in to new facilities so we can bring them online when they are completed for increase oil throughput.

– What inspiring goals and ways to achieve such goals would you highlight to Company staff?

Again, first of all, I would start with Safety. It is my challenge and my goal for us to make the Expansion Project the safest project in Russia and Kazakhstan! I think we can achieve something here that is noteworthy within the industry, especially the Oil and Gas Industry. To show people that we can build this Project with excellent safety records!

Second, we have real challenges this year in Expansion and Base Business to bring the new facilities online by the end of this year. This is going to be a tough goal because that requires everyone working together to be able to complete, commission and, start-up the new facilities before the end of the year which then gives CPC increased throughput.

– It would be interesting to know if there are similar professional holidays in the US? If there are such professional holidays, how are they celebrated?

This is an interesting question. We do not have an Oilmans Day in the US. What we do have in America is a National Engineers week every year in February and the purpose of that is similar, to recognize the engineering profession for their contribution to society and to encourage people to get more involved in the engineering careers. But in the US this day is not about celebration, it is more for recognition. For example, in the past I have gone to high schools to speak to the students and we do some presentations and discuss engineering careers.

– How do you celebrate the Oilmans Day in Russia?

I was quite surprised when I first experienced Oilmans Day herein Moscow. Here at CPC it is done with awards, food, and team spirit. I find it enjoyable. ■

CPC Panorama queries were raised by Julia Starodubets





Dennis Fahy

A CPC delegation headed by Dennis Fahy, CPC First Deputy General Director for Operations, visited the Atyrau Pump Station on June 20-21.

In addition to Dennis Fahy, the visit's conclusive meeting was attended by Deputy General Director for Engineering and Projects William Simpson, General Manager for Facility Operation Roman Vasilyev, Kazakhstan Pipeline Ventures General Director Timur Rakhanov, Coordinator, Pump Stations and Pipeline, Kazakhstan Almas Jaurov, Eastern Region Operations Manager and construction contractors representatives. The meeting discussed construction work progress at Tengiz and Atyrau Pump Stations, and stressed that modernization of these facilities was of primary importance for increasing throughout capacity of the CPC Crude Pipeline System.

Over the period of June 1-15, a number of technically

A Course Toward Cooperation

complicated operations was performed at Tengiz Pump Station: tie-ins of new process pipeline sections, including the installation of a Ø 1000x1000 and Ø 1200x1200 mm T-connector, replacement of 12 flanged gate valves with new welded ball valves, replacement of pressure regulators, installation of a spring loaded pressure relief valve and tie-ins of new drain lines. All the work was performed in strict compliance with the applicable industrial safety regulations, on schedule and to good quality. This was possible thanks to coordinated action by the Project team including the construction contractor, project management group, Kazakhstan coordinator, department of operations and other services. Thanking those who accomplished the task, the participants at the meeting emphasized its importance for connecting new facilities at the Tengiz Oil Pump Station.

In addition, the meeting discussed schedule performance for the facility upgrade and new construction at the Atyrau Pump Station, including installation of gas-turbine driven main line pumps, booster pumps, two VFRTs-20000 vertical steel tanks, surge relief system,

indoor switchgear, integrated transformer substation and cable racks. The main task for Atyrau Oil Pump Station today is to complete the LACT 22-RK-A009 crude oil custody transfer metering system. The meeting discussed a detailed schedule for final work elements, including the installation of electrical systems, pressure tests, checklist processing, electrical power supply to the system, individual and integrated tests, SCADA integration, obtaining necessary permits and system acceptance for operation. Special attention was devoted to the issues of interfacing between the construction contractor, equipment supplier, CS&C contractor, the role of PMC KPV and regional operations department. Individual and group appointments were made to supervise each and every element of the schedule.

The meeting was an open discussion that helped reveal problematic issues associated with the implementation of the Atyrau Pump Station Project, and formulate a path forward for better coordination between the Project stakeholders. ■

Vasily Roschin
Ekaterina Krapivko





Nurtas Shmanov: «The CPC oil pipeline is of strategic importance to Kazakhstan»

OILMEN ARE PEOPLE WITH A PARTICULAR WORLDVIEW. THEIR DEVOTION TO THEIR PROFESSION IS INFINITE, AND WORK IS THEIR WAY OF LIFE. THEIR INDUSTRY BROTHERHOOD CANNOT BE DIVIDED BY BORDERS. ON THE EVE OF CELEBRATING THE OIL AND GAS INDUSTRY WORKERS' DAY "CPC PANORAMA" INTERVIEWS SOMEONE WITH A WEALTH OF EXPERIENCE IN OIL AND GAS – NURTAS SHMANOV, DEPUTY CHAIRMAN OF THE MANAGING BOARD FOR TRANSPORT INFRASTRUCTURE OF JSC NC KAZMUNAYGAS.

Nurtas Nuribekovich, the Republic of Kazakhstan is actively developing its fields, and boosting hydrocarbon production. Where does hosting the CPC oil transportation infrastructure come into that? How does increasing the throughput capacity of the Tengiz – Novorossiysk pipeline benefit the republic's oil industry?

According to its 2012-2022 Development strategy JSC NC KazMunayGas is expecting to achieve an increase in hydrocarbon assets of up to 1,4 bln tons. As part of continental Eurasia and therefore remote from the world oil and gas markets, Kazakhstan in realizing its full oil production potential has to rely heavily on the development of reliable and efficient export networks, including route diversification strategies. At the

moment our oil goes for export via three main oil pipelines: Caspian Pipeline Consortium, Uzen – Atyrau – Samara, and Kazakhstan – China.

CPC pipeline transports the largest volume of Kazakhstan oil and is the most economically attractive export route for the national shippers. It is of strategic importance for the country and has a significant influence over the socio-economic development of the republic in general and of the Atyrau region in particular through taxation, the creation of new jobs, using local suppliers and service providers and community support.

With growing oil production at Tengiz and other fields and the planned commissioning of Kashagan field, the implementation of the CPC Expansion Project will help to deliver the increasing volumes of Kazakhstan oil to the global market, thus taking good care not only of the national economy »





Oil industry leaders at work – no office environment

as a whole, but also benefitting the oil and gas industry of the Republic of Kazakhstan.

What are the guiding principles of cooperation between the KazMunayGas National Company and the Caspian Pipeline Consortium? What are the future perspectives for such cooperation?

Our cooperation with CPC is based on principles of long-term cooperation, mutual satisfaction, transparency and absolute responsibility for the duties undertaken and decisions made, in full compliance with the agreements establishing the Consortium.

JSC NC KazMunayGas always welcomes all essential and well-founded initiatives of the CPC shareholders and management with regard to workplace and production safety as well as those bearing on the fulfillment of oil transportation tasks and that, in

turn, affords the shareholders more confidence in planning their upstream operations in the long run.

It is worth noting that the partnership between JSC NC KazMunayGas and CPC has become even closer since the approval of CPC Expansion Project and the commencement of construction work. The same is true for collaboration between CPC, Transneft, Chevron and the rest of the shareholders. Representatives of JSC NC KazMunayGas and its subsidiary Kazakhstan Pipeline Ventures LLC are actively involved in the everyday work at the construction sites of the CPC Expansion Project. Such shared tasks and mutual goals have united our staff and given a new impulse for further development of the working partnership.

Again, I should say that the Republic of Kazakhstan and JSC NC KazMunayGas are

consistently following the requirements of the Pipeline Consortium Agreement of 1992, CPC Shareholders' Agreement of 1996 and other CPC project agreements.

What is the share of Kazakhstan oil in the current volumes channeled via the Tengiz – Novorossiysk route? How will the completion of the CPC Expansion Project affect that ratio?

In 2012 oil and gas production in Kazakhstan amounted to more than 79 mln t of oil and gas condensate, with 69 mln t exported. The largest volume of oil was exported via CPC pipeline – 27,9 mln t, or 40% of the total hydrocarbon export flow from Kazakhstan. That oil comes mainly from the fields in western Kazakhstan, such as Tengiz, Karachaganak, Uzen, Martyshi and some others. With planned increases in oil production at Tengiz, Kashagan and other fields, the volumes

exported by Kazakhstan to the world market are expected to rise.

All this considered, it is likely that when the construction of the Expansion Project is complete and its facilities fully commissioned the volume transported for export via the CPC pipeline will amount to about 50 % of all oil produced in Kazakhstan.

You are an oil professional with a wealth of experience and a profound knowledge of the industry both in Russia and in Kazakhstan. How do you think the oil and gas sector is doing now in the former Soviet Union?

Kazakhstan is the oldest oil producing country in the world, with the first extraction going back to the end of the 19th century. Following the collapse of the Soviet Union the oil and gas industry along with other industries in Russia and in Kazakhstan went through difficult times. Field equipment was rundown, oil refineries were out-of-date, and the pipeline system was in need of modernization and development. For newly-independent Kazakhstan this was only one problem among many. The Head of State and Government had to attend to all sectors of the economy and all aspects of life in the republic with meticulous and dedicated daily work. Kazakhstan's oilmen had to sustain the existing level of the industry and to adapt it to the new market conditions. We can safely say they proved to be up to that task and continue to make successful progress.

The industry has seen a great deal of work carried out in those years: equipment and technology has been continually updated, huge investments brought in, and a national professional training program has been implemented. To give an example, Kazakhstan's oil production has tripled compared to the beginning of the 1990s, export has increased more than five-fold, about 5,000 km of pipeline has been constructed, we have acquired a tanker fleet of our own, a working scheme of upgrading oil refineries exists, and so on. Of course, some problems remain in Kazakhstan as well as in Russia and we are working to solve them – to boost the cost efficiency of field operations, to bring oil refineries up to the best modern standards, to create new and expand existing export networks etc. There is however no doubt that today both the Russian and Kazakhstan oil industries are at the forefront of economic development in both countries and have a great impact on other sectors.

In addition, we jointly participate in developing the largest projects both onshore and on the Caspian shelf. I am glad to mention that cooperation and mutual support between Russian and Kazakh companies in hydrocarbon transportation, as well as in the oil and gas business in general, could be presented as an example of working to mutual benefit. The CPC project is proof of that, showing how the two countries by coming together not only give a new impulse in the development of the project, but also bring in western partners as shareholders.

This issue of “CPC Panorama” is due out on the oil and gas industry workers’ day, which falls on September 1 this year. What would you like to say to the staff of JSC “CPC-K” and CJSC “CPC-R” in connection with their professional holiday?

CPC pipeline system is one of the largest investment projects in the CIS energy sector, to which world-class experts bring their energy, their knowledge, their sense of duty and professional aptitude to contribute significantly to a greater cause, one which goes beyond the scope of the CPC project.

I am glad to have worked at a certain point for the CPC – a company that fosters cooperation between the world's leading oil and gas enterprises along with an ongoing sharing of professional experience and exchange of industrial knowledge among the staff from various companies all around the world.

I take this opportunity personally and on behalf of KazMunayGas National Company to extend warm greetings to the CPC staff and representatives of the shareholders on the approaching professional holiday – the oil and gas industry workers' day!

Please accept my heartfelt wishes for the success of your work, professional growth, family happiness, reliable partnerships, and a spirit of good will and mutual support among co-workers. ■

The start of a big journey

GROUND BREAKING CEREMONY MARKING THE BEGINNING OF THE CPC EXPANSION PROJECT CONSTRUCTION WORKS TOOK PLACE IN KAZAKHSTAN ON JULY 1, 2011.

The work that will allow the expansion of the pipeline's transportation capacity started on July 1, 2011. To mark this momentous event that would signify a new stage of CPC's existence, the shareholders and the company's board decided to organize a high-profile ceremony not far from Atyrau pump station in Kazakhstan. The place was chosen because the greater part of the pumped crude oil comes from Kazakhstan, starting its journey from this station's receiving transfer unit. In addition, PS Atyrau is the place where the new piece of pipeline starts, the one that is meant to replace the old smaller diameter 88 km long segment.

The preparations for the ceremony took several months. An event-coordinating group was created in Moscow, and the areas of responsibility were distributed among CPC managers and CEOs. Every week the Moscow headquarters would have a conference call with Kazakhstan during which CPC General Director would supervise the event planning, discuss multiple current issues and find ultimate solutions that would satisfy every party concerned.

The amount of work achieved was considerable. Over 200 representatives were invited to attend the ceremony: CPC shareholders, relevant

ministries and organizations, regional authorities of Russia and Kazakhstan, diplomatic missions of Russia, USA, Great Britain, Italy and the Netherlands in the Republic of Kazakhstan, and also from the Kazakh embassy in Russia; also from international agencies, veterans who had taken part in the creation and development of CPC project, journalists from multiple media channels of both countries, and various international media agencies. All the invitations had to be sent, every detail of the guests' trips considered, and consultative and organizational help rendered.

CPC transportation department teamed up with their Kazakh colleagues to arrange two charter flights from Moscow and Astana. To transfer guests to Atyrau it was decided to rent numerous executive cars and coaches. The transport was supposed to meet the most stringent safety requirements, and the carrier companies had to go through the most diligent examination by CPC auditors.

Atyrau was also very busy. It was impossible to have the ceremony the pump station for safety reasons. Literally, in the middle of nowhere, a flat space had to be created across the road from the pump station: the organizers had to build a stage and various other temporary structures, deliver and put in

place the equipment for the ceremony, arrange the banners, shareholders' flags, etc.

The geographical range of people involved in the preparations was very impressive. A Kazakh event agency brought the stage equipment from Almaty. The Marine terminal staff from Novorossiysk provided



electronic models of the Shareholders' flags that they have in the hall of the Marine terminal main control centre. The vehicles for guest transportation were rented in different parts of Kazakhstan. The planning headquarters was the Company's central Moscow office.

Several days before the event a group of managers and specialists from Moscow came to Atyrau to help and coordinate the local experts. The lead role on the ground was taken by Nurtas Nuribekovich Shmanov, an experienced manager who at the time was the managing director for oil transportation at JSC NC KazMunayGas.

It was a high-level event for top managers that had to be arranged, and everyone was nervous, but Nurtas Shmanov was decisive and calm as usual;

he received the reports of those responsible for particular assignments, instructed people, and made everyone believe we could cope with the assignment and conduct a top-level ceremony.

Of course, there were minor mishaps and blunders. For example, it took several attempts to place the

the information stands the CPC General Director ushered a representative delegation that included the two profile cabinet ministers of both countries, the Russian ambassador in Kazakhstan, the managers of the national companies “Transneft” and KazMunayGas, and the representatives of other Consortium shareholders. He told them about the Consortium

joint of the bigger diameter pipes went out. When the welding was completed successfully the distinguished guests left their signatures on the new pipe, as journalists snapped away with their cameras.

The modern building machinery and equipment that would later be used in the construction works was then arranged



Consortium’s shareholders’ flags in the correct order. Some ceremony details were settled on the spot, the day before the event, since we had to consider the peculiarities of the location, equipment and the placement of temporary structures. Sometimes managers responsible for the event didn’t see eye to eye on things. But the feeling of unity for the sake of one common goal allowed them to find optimal solutions and to honorably present the roles and status of each and every participant.

Finally everything was ready by the appointed time. The flags of Kazakhstan, Russia, CPC and all the shareholders fluttered under the picturesque sky of the Kazakh steppe. The workers of the contracting agencies lined up in front of the stage in bright uniforms. The distinguished guests started to arrive. Along

and its history, and also about the Expansion Project transportation capacity.

Then the CEOs ascended the stage and the official ceremony began. One could hear the complimentary speeches in Russian, Kazakh and English in the midday heat. All of the almost 1,000 people gathered by the stage felt the historical significance of the moment, and cheered the speakers.

Delegates from the contracting agencies received from the CPC General Director certificates attesting to their readiness to start the works. Then the distinguished guests followed the red carpet that led them to the newest welding station ready for operation, set at one of the joints of the huge pipes of the new 88 km section that the contractors had yet to construct. The call to start welding the first

Celebration at the NPC Atyrau

around the location, and TV broadcasters started using it as the background for their stand-ups. The journalists interviewed the ministers and the CEOs, asking dozens of questions and interrupting one another.

And then, as one of the journalists wrote later in his article, “a storm broke out”. He wasn’t speaking figuratively: a real dust storm appeared. Even at this moment of high technology, nature remained unpredictable and a law only to itself. But everybody took this violence of nature as a good sign, since it had started only after the ceremony was over. It had to mean that the spirits of the great steppe were looking on benevolently towards the project. ■

Dmitriy Gerasimuk



The most remarkable job

themselves, their knowledge and experience, who are always ready to take responsibility for solving complex problems. It is due to these people's professionalism and hard work that the annually increasing volume of Russian and Kazakhstan crude oil has a secure and effective means of export transportation. We chose this remarkable profession as our lifework; it's full of hardships, obstacles and risks, but on the other hand it's significant, essential and honorable, and furthermore we're proud of the fact that our work contributes to the economic growth and prosperity of Kazakhstan and Russia, as well as the consistency of international relations.

We enter this festive day with good results behind us as our company maintains its leadership in raw hydrocarbons supplies from the

Caspian Sea to the world market. The formula of our success is lies in the high professionalism, perseverance, industriousness and everyday hard work of every CPC employee put together. We have new ambitious targets and possibilities of cooperation ahead, and that imposes more responsibility on us. If we want to increase the shipment volumes and the capacity of the CPC crude pipeline system, transporting millions of tons of crude oil while observing the standards of industrial safety and environmental protection will require our total efficiency, discipline and an innovative approach, and I'm sure all of us will do our best in order to achieve those goals.

With all my heart I wish you brighter ideas and more interesting projects in the future, and harmony, prosperity, success, health and festivity on this day! ■

Mellyat Karabalin
Managing director JSC CPC-K

Dear colleagues!

Allow me to extend my sincere congratulations on the occasion of our professional holiday – the oil and gas sector workers' day in the Republic of Kazakhstan, and the oil and gas industry workers' day in the Russian Federation! It's the holiday of people who are confident in



| At the line pipe of Tengiz – Novorossiysk

Professionalism plus cohesion

– I have been working as a JSC CPC-K Deputy Director General in charge of liaison with the government of the Republic of Kazakhstan for 14 years. I can say that we never had any dispute with the republican bodies even though there have been various issues. I think we can all take the credit for this, and it's largely due to the transparency of CPC-K communications policy. We are always ready for handling the media, which is why there are numerous publications that tell about CPC and the impact it has on the social sphere of local communities. Since the year 2000 CPC-K has allocated \$22,23 million on social support programs, with primary attention paid to the disabled, children and healthcare, among other fields.

To use such charity funds to the maximum extent possible, to render targeted social assistance and change the life of people for the better, we define the primary needs of the locals – the so-called “sore spots”. I'm convinced that business today has to contribute to the “place-making” which in turn will provide a favorable social environment for its task solution.

Interactive boards – a gift of CPC-K to town and village schools of the Atyrau region – make lessons especially entertaining!

Society has traditionally been particularly demanding of the oil industry. Working in this field is both honorable and involves responsibility. I want to take this chance to send my compliments to my Russian and Kazakh colleagues on the occasion of the oil and gas industry workers' day. This professional holiday is a good tradition that unites the people working in this industry within the territory of the former Soviet Union.

There were 200 employees at the Consortium when I joined it, and now there are many times more, which means the overall performance should be better. There is no doubt that the CPC staff is highly professional, but professionalism is not everything. I would wish to see more cohesion and personal involvement that would unite the huge multinational CPC team in an



atmosphere of mutual assistance and friendship. That is the only way to bring out the best personal and professional qualities of each team member for the sake of the common goal. ■

*Kanatbek Zhumin,
JSC CPC-K Deputy Director General in
charge of liaison with the government
of the Republic of Kazakhstan, Astana*





Murinov Sarsembay
Eastern Region Manager

A Pipeline «to Grow Into»

WHATEVER THE ACHIEVEMENTS OF TECHNOLOGY AND ENGINEERING, THE INDIVIDUAL HAS BEEN AND ALWAYS WILL BE THE MAIN DRIVING FORCE BEHIND PRODUCTION. IT WAS NOT SURPRISING THEN THAT WHEN ASKED ABOUT THE MAIN ACHIEVEMENTS OF CPC-K, SARSEMBAY MURINOV SPOKE FIRST NOT ABOUT PERFORMANCE INDICATORS, BUT ABOUT ACHIEVEMENTS IN HEALTH AND SAFETY WITH REGARD TO THE COMPANY'S EMPLOYEES.

– We attach primary importance to the safety and health of our employees, the employees of our contractors, and to environmental protection, Sarsembay Murinov remarked. A systematic approach is used for resolving these issues, he went on to say. As a result, we have a record of no loss of life, injuries, fires or oil spills. As of July 1, CPC-K Eastern Region had recorded nearly 8.7 mln hours without work-related injuries.

As regards our performance indicators, in 2012, we received 30.6 mln t of crude oil into the system of which 27.9 mln t were transferred to CPC-R and 2.75 mln t went to Kaztransoil.

A minor year-on-year throughput capacity reduction occurred due to the start of an Expansion Project: the commissioning of new facilities and the upgrading of existing ones required increased time of scheduled pipeline shut-downs.

Approximately 106 km of the oil pipeline were repaired and over 4,300 defects were mended during the last year under the “Tengiz – Novorossiysk Pipeline Rehabilitation and Recoating” project. In addition, a number of important actions were taken at the Tengiz and Atyrau pump stations which helped improve

their operational reliability and environmental safety.

Over the first six months of 2013, CPC-K system received 15.358 mln t of oil of which 14.236 mln t were delivered to CPC-R and 1.098 mln t were delivered to Kaztransoil.

– Sarsembay, what are the tasks currently facing the team of the CPC-K Eastern Region?

– Our top priority for this year is the completion of work under Expansion Project Phase 1. We have to complete the oil pipeline refurbishment (the 116 km – 204 km segment) and have it commissioned, upgrade Tengiz and Atyrau Pump Stations and 110/10 kV transformer substation at Tengiz Pump Station.

Until the end of this year, we expect the completion of the Throughput Capacity Increase Plan for the Kazakhstan oil pipeline up to 30 mln t. We expect the pipeline's throughput capacity to be increased up to the design figure without the use of drag-reducing agents. Incidentally, as things stand today, the pipeline's capacity is 22.7 mln t for Kazakhstan oil without the use of drag-reducing agents and operating factor of 0.90.

By the end of 2014, the figure is expected to increase to 45 mln t and further increase to 54 mln t toward the end of 2015.

Oil transportation plans for 2013 include 26.7 mln t to be supplied to CPC-R and around 2.0 mln t (based on technical possibility) to be supplied to Kaztransoil.

Still in focus are the issues of insuring labor safety at the CPC-K facilities, prevention of occupational diseases and minimizing environmental impact. These tasks are being accomplished through the use of state-of-the-art technologies and modern equipment, strict production and environmental compliance monitoring, internal audits and plentiful provision for accident prevention means and methods.

– Which modern equipment and technologies are employed by CPC-K to ensure industrial and environmental safety?

– In order to reduce hydrocarbon emissions, crude oil storage tanks are equipped



At a meeting in the Atyrau project office

«Incidentally, as things stand today, the pipeline's capacity is 22.7 mln t for Kazakhstan oil without the use of drag-reducing agents and operating factor of 0.90. By the end of 2014, the figure is expected to increase to 45 mln t and further increase to 54 mln t toward the end of 2015»

Sarsembay Murinov

with floating roofs with rim seals. Siemens gas turbines used for driving the CPC's main line pumps and power generators are compliant with strict industrial and environmental safety standards. In addition to their high efficiency (31%), they are characterized by a low noise level and the lowest amount of toxic emissions into the atmosphere. The fact is that the amount of toxic emissions generated by a turbine is proportional to the fuel combustion temperature: the higher the temperature, the greater the amount of toxic emissions. Our turbines feature the Dry Low Emission »



(DLE) system. Gas combustion temperature in these turbines is about 500°C lower than in similar non-DLE turbines, and is equal to 1675°C instead of the usual 2175°C.

Closed-type crude oil drainage systems complete with safety valves and special equipment completely exclude the possibility of oil vapor discharge into the atmosphere at the oil pump stations.

Expansion Project also provides for environmental impact reduction measures. New oil pump stations are equipped with surge relief systems, closed-type drainage systems, and waste treatment facilities for household and industrial wastes.

The transition of Atyrau Oil Pump Station to external power supply (10 kV) allows transferring the facility's own turbine-generators to reserve mode and reducing atmospheric emissions.

One modern engineering solution serving to increase industrial safety will be the introduction of soft-start systems for the high-voltage electric motors at Tengiz and Atyrau pump stations as well as at the new stations.

– Which principles are used for building up relations between CPC-K and the Republic's oil-producing companies?

– We are working strictly within the framework of the documents set out to regulate these relations. Oil producers authorized to supply crude oil into the CPC-K system are appointed by the shareholders in line with their rights, and algorithms of our interfacing



with crude oil suppliers are regulated by oil transportation agreements executed in the standard form which was approved by the shareholders as of July 18, 2001.

Upon accepting crude oil into the system, the CPC dispatcher service and two test labs monitor the supplied crude for compliance with the approved quality figures.

– What are the pipeline's workload forecast for the near future?

– Due to the increased oil production at the Tengiz and Karachaganak fields and the Kashagan project's entering the commercial production phase, the pipeline has fairly good workload prospects for several decades to come. That is why as of late 2010 our shareholders approved the FID for the Oil Pipeline Expansion Project from 28.2 mln t to 67 mln t per year.

– What would you like to wish your colleagues in the Consortium on the occasion of the upcoming professional holiday, Oilmen's Day?

– I wish them productive work, professional success and new achievements, reliable partners and true friends, and successful implementation of all their plans. Happiness and health to all of you and all those who you cherish!

I would like to wish our company accident-free operations and the successful implementation of our Expansion Project. ■

*Ekaterina Suvorova
Photographs by Alexander Detkov*

Courtesy of CPC-K

MANUFACTURE



1



2



3



4



2

ENVIRONMENT PROTECTION



5



5

SAFETY



6



6

SOCIAL RESPONSIBILITY



7



8



7



9



10



11



11

- 1 – Pump installation at NPC Tengiz
- 2 – Line pipe construction
- 3 – Shut-down at NPC Tengiz
- 4 – Power pylon installation
- 5 – Subbotnik at the Ural bank
- 6 – Tabletop exercise
- 7 – CPC-K supporting young paralympics participants
- 8 – New Year gifts to the children at the boarding school
- 9 – CPC-K to veterans and handicapped
- 10 – CPC-K to healthcare
- 11 – Opening of a school repaired by CPC-K



Construction and Transmission

OUR FLIGHT LANDED SAFELY AT ATYRAU AIRPORT. AFTER THE JULY CHILLS AND RAINS OF MOSCOW, ATYRAU FELT VERY MUCH LIKE A FURNACE. PLUS 35 CELSIUS IN THE SHADE AWAITED US AT THE ATYRAU AND TENGIZ OIL PUMP STATIONS WHICH WE WERE SOON TO VISIT.

The weather would have been ideal for a seaside vacation, but oil pipeline operators have no time to relax: in addition to ensuring accident-free transportation of Kazakh oil, they have to expedite work in increasing the system throughput capacity.

Team work

At the Atyrau offices we were briefed on the scope of priority tasks that our Kazakh colleagues were working on. Not forgetting about the routine interfacing with the oil suppliers, the specialists were focused on achieving the soonest possible completion of the Expansion Project Phase 1.



Askhat Khamzin

Askhat Khamzin, lead pipeline engineer who has been with the Project from the very start, told us:

– When I joined in August 2010, it was a team of 10, and now it numbers 80, for all of whom the work on the Kazakhstan section of the line represents a unique experience. Laying 88 kilometers of Ø1,000 mm pipes was a real challenge for all of us. Now the pipeline is all welded together, put in

place, tested and dried. We have successfully overcome 155 natural and artificial obstacles which arose on the pipeline's route. Particularly difficult was crossing the utility lines owned by third parties, including Kaztransoil, the National Company Kazakhstan, the Kigach-Mangyshlak water line, various communication cables, and gas and power lines... Sometimes there were several different kinds of utilities laid within a common ROW. We have crossed all these obstacles quite smoothly using the cut-and-cover method, observing the technical requirements issued by the owners of these lines and in the presence of their representatives. We have crossed three national highways and a railway without causing a single minute's traffic interruption thanks to using the directional drilling method.

Probably the most challenging and critical task was the construction of a 930-meter long crossing of the Ural, the biggest river of Kazakhstan. The crossing was built

using HDD method by GNB-Neftestroi, a contractor from Tomsk. These guys are true professionals! In two months they built a tunnel under the river bed, and it took them only two days – from August 31 to September 1, 2012 – to pull the pipe through. Frankly speaking, my colleague Azamat Niyazgaliyev and I were very nervous. We watched the site in turn around the clock. But everything worked out well – the pipe went through as smoothly as butter, without a single obstacle on the way. Of course, it's a credit to the team working in tune, including our technical specialists, management company, technical and authorship supervision and the contractors. We were like members of one big family coming together to promptly resolve all the issues that cropped up.

With a focus on quality

Seeing once is indeed better than hearing twice. We went to the pipeline construction site located eight kilometers from town where we saw the new MLBV site No. 12. Its transformer substation (already connected to the grid) had successfully passed a 72-hour operation test.

– At this site, the construction contractor, Kazstroiservis, has completed the work 100%, Askhat Khamzin explained. – Now, it's time for our colleagues responsible for Telecom – CS&C system to join in. Chevron specialists will then install FOCL and get their hardware hooked up.

In the meantime, a radio tower was being prepared for installation nearby – an

imposing 40-meter long structure lay on the ground waiting for the challenging operation of pulling it upright and fastening it to the sound foundations which at the time of our visit were being backfilled with layer-by-layer tampering.

The work was watched attentively by senior construction and installation supervisor Asylbek Kapakov.

– This is a very critical operation. After all, the structure is fairly high, he commented. – Tampering of each 20-cm layer should be done to meet the design requirement of at least 95% compaction. Quality control is performed for each layer by taking samples. Sampling is performed by an ad hoc commission only.

Deputy Manager for Quality Control and Assurance (Kazakhstan Pump Stations and Pipeline Group) Serik Bitanov commented on the approaches and methods of quality control in the Expansion Project as a whole:

– We do have issues, but they are all resolvable. The Project is a living organism, and not everything that was planned could be done properly right away. Sometimes we have to speak to the contractor, to persuade them to comply with the technical requirements. Bureau Veritas Kazakhstan, a licensed company, helps us in performing the necessary supervision. They provide professional inspectors specializing in various fields, such as welding, engineering, construction, installation, etc., who perform their inspections in line with the quality control inspection

schedules. Quality inspection schedules are in place for each facility and for each activity type. We perform receiving inspections, functional inspections, acceptance inspections, etc.

Serik stressed that the problems with the quality of welding, which used to exist with the Kazakhstan scope of the Expansion Project, have become a thing of the past. Rejection rate has reduced dramatically and is currently under 6%, i.e. within the tolerable limit.

– Inline inspection of the new 116-204 km pipeline, has proven the absence of defects pertaining to construction quality, he added.

Champions of high performance

The facility named Sub-Station (S/S)-220 “Atyrau” arouses associations with a science fiction movie – a sophisticated engineering facility amid a desert with some odd white structures pointing into the sultry sky and uniformed men wearing sunglasses and face masks moving within the perimeter. Extraterrestrials?

The facility, however, has quite a terrestrial origin. This is a power substation undergoing upgrade under the Expansion Project, and the personnel wears protective facial cover only to avoid sunburn. Experienced professionals oversee the show, but there are plenty of young people at work. Despite the almost unbearable heat, the spirit is high and combative.

– We are used to such conditions, the guys say smiling at us in response to our words of compassion. »

Davlen Sayakov, Promstroyenergo foreman, proudly points to a strange-looking huge structure and agrees to be photographed with this “gismo with horns” on the background.



*Davlen
Sayakov*

– This is a 5 MW 3-phase oil-immersed reactor, RTM, , he explained. – In effect, this is the heart of the substation, an embodiment of modern science and engineering. By and large, the progress is good: we are expanding the facility, furnishing it with state-of-the-art equipment, adding cells. And we are doing all that while the substation is running. This

in charge of supervising the external power supply facility construction, commented:

– The project has adopted a number of innovative engineering solutions pertaining to electrical power supply, and what we see here is the implementation of one of them. After upgrading, the S/S-220 “Atyrau” main substation which belongs to the national transmission grid operator of Kazakhstan, KEGOC, will be used for powering the newly constructed oil pump stations – A-PS-3 and A-PS-4A. For that purpose, we are also building two high-voltage power lines to a total length of 220 km. Each of the two oil pump stations mentioned above will have its own two-transformer substation. I can say in full certainty that no other oil-producing or oil-processing operation has similar equipment in its

Oil Pump Station, we have installed new, more powerful, transformers at the existing substation. It’s important that the switching to the new transformers was performed without stopping the pump station.

In general, it is unique for West Kazakhstan that a consumer has a system like the one being created here at CPC-K, Marat Yesengeldin concluded.

A point of honor

In the Expansion Project office we were cordially received by Almas Jaurov, RK Coordinator, PS and Pipeline , who readily shared his views of the problems and solutions in relation to the Kazakhstan scope of the Project.

– The quality assurance and control system that we have created is something that



Atyrau Oil Pump Station

requires a particularly rigorous approach to safety compliance.

Expansion Project lead engineer for electrical power supply and chemical protection Marat Yesengeldin, who is

possession. As regards the operated oil pump stations, we have completed the project of powering the Atyrau Pump Station from an alternative source – the “Atyrau-Zharyk” 110/35/6 substation. To meet the increased capacity requirements at the Tengiz

had never been here on our territory ever before. We have already developed some good practices in this field. We are cooperating with technical teams from Moscow and with all parties of the Project, including Operations Department.



Almas
Jaurov

A good tradition has formed of joint participation in all activities by the management company, contractor, design institute (currently they are at the site providing field supervision), and the additionally formed field engineering teams. We get together to resolve all issues, make decisions and move ahead together. This is how we do without bureaucratic red tape, expedite productive work and promote team spirit.

In my opinion, an important achievement has been the introduction of Incident and Injuries Free safety culture.

Russian project areas was a great success. The forum gathered around 1000 people. This year we are also planning a similar event to present our achievements and set objectives for further improvement of the HSE culture.

In this way, working with us is not only difficult, but interesting too. And the responsibility is great too because in addition to CPC-K we represent the interests of the Republic of Kazakhstan. The Government Program calls for the soonest possible start of production at the Kashagan field, and our President has ordered to start operations at this promising field and to supply Kashagan oil through CPC system and Atyrau Pump Station. The task is very important and we are at the center of it.

around the station's grounds is most striking, and there is the barely perceivable scent of flowers in the air. But before we could make all these pleasant observations, we were pulled through a most stringent safety indoctrination given by the station's deputy head, Askar Tuktibayev. It was not until after we had signed the Safety Briefing Log, received hard-hats, goggles and overalls, switched off our mobile phones and photo-flash equipment, that we were allowed to proceed with our inspection.

Speaking of the Atyrau Pump Station's role in the CPC system, the station's head Askar Tazhigulov remarked:

– Unlike Tengiz Pump Station, receiving oil mostly from TCO, we, in addition to pumping oil from Tengiz, receive quite a lot of crude from a good number of suppliers. All combined, this



Tengiz Oil Pump Station

Theme events help foster understanding of this simple truth by the employees. For example, a two-day safety summit held in Atyrau in October 2012 with the Expansion Project contractors from both Kazakhstan and

Atyrau Pump Station: A time of changes

Strange as it may sound, the Atyrau Pump Station looks very much like an oasis amid the torrid earth of the desert. The abundance of greenery and beautiful flowerbeds installed

makes up a huge amount of crude coming from various fields which we transmit to Astrakhan. A necessary condition that we apply for our work is a quality bank which imposes stringent requirements on the suppliers in regard to all relevant »

criteria. Consequently, in terms of equipment coverage Atyrau is ahead of any other station of its kind with a separate Meter Unit, and a quality loop for each supplier. After the completion of the Expansion Project, in addition to the existing five meters, there will be three more units plus additional metering lines for the Kashagan and Karachaganak oil.

Furthermore, PS Atyrau will soon acquire a powerful surge



Askar
Tazhigulov

relief system that would protect the station equipment against hydraulic surge. Visiting the drain tanks site of the future surge relief system, we had the opportunity to see for ourselves how large the scale of work was. While we were there, we witnessed the backfilling of a huge pit accommodating gigantic concrete “saddles” designed for four tanks. The size of the tanks which will soon be hidden underground was also impressive.

– What is particularly difficult about running the PS today? – we asked Askar.

– As you can see, construction work is ongoing here, while the station is being operated, he replied. – This represents an extra challenge. In addition to keeping an eye on the main function of oil transmission, we have to watch hundreds of people

and numerous machines and equipment operated by the construction contractors. And nobody has relieved us of the duty to perform routine maintenance and service of the PS equipment which requires a specialist contractor to be present at the site. Work has to be organized so that everybody performs their work without interfering with the others, which puts a lot of pressure on the management and the PS maintenance personnel. Also, relevant security and access regulation measures need to be taken.

As things stand today, the present and the future seem to have met at PS Atyrau where new, more powerful and modern systems are being installed alongside the existing ones which still remain in operation. The station is changing. Soon it will have two new oil storage tanks, the installation of which is to begin shortly.

At the Expansion Project sites work continues in two shifts. On the day of our visit, 89 people were engaged in construction work. Construction is believed to be predominantly a male occupation. That is why we could not have overlooked a woman wearing a KSS (Kazstroiservis) uniform and giving orders to several workers. We approached her to get acquainted.

– My name is Tatyana Tochilina, I’m the head of coating and painting crew, she introduced herself. – We perform all kinds of sandblasting, surface cleaning and painting work

here. The coatings we apply consist of several layers, including a protective layer and a fire-retardant one. Our task is to protect both surface and underground structural steel elements from corrosion.

– Can you manage it?

– Of course! There are experienced people in the team. As for me, I’ve been doing it for 20 years now.

– Isn’t it difficult to give instructions to men?



Tatyana
Tochilina

– Why? Quite the opposite! It is even better to work with men than with women because they are more serious and more responsible. Of course, we have arguments sometimes, but work is work. After all, it’s a construction site!

At KP 0 km

While approaching PS Tengiz, one cannot miss the huge bright-yellow artificial plains located on the grounds of the TCO refinery which is located close to PS Tengiz. It’s sulfur – millions of tons of sulfur extracted from the processed oil. A spectacular view, though a bit terrifying one, to be frank.

PS Tengiz employees are playing it cool: everyone has an individual filter and they are trained about what to do if the H₂S concentration in the air

risers above the critical level. There is a shelter nearby to accommodate 50 people, and an alarm system. H₂S detectors are installed at various locations over the territory and there are various means of communication with TCO emergency response service available in the control room. They confirm that the situation is fully under control of the specialists.

Having received individual respirators and having understood the strict rules to be observed while at the facility, we, together with PS Tengiz manager, **Salamat Altynaliyev**, continued our acquaintance with the station.

– PS Tengiz is located at KP 0 km of the Tengiz – Novorossiysk oil pipeline and it is a main oil pump station, Salamat told us. – NPS Tengiz was commissioned in 1989, and in 2012 it was upgraded and refurbished to be able to cope with increased oil throughput requirements. The upgrade made the station even more reliable and environment-friendly. Have a look at these 20,000 t oil tanks. Those two with tank dome roofs are the old ones, while the other two with floating roof pontoons are the new ones. The latter completely exclude the possibility of oil vapors being released into the atmosphere. Each tank is equipped with a smart control system preventing its overfilling. We receive oil from TCO at a pressure of not more than 16 kgf/m², while the PS delivery pressure is 23 kgf/m².

So, what does Tengiz oil look like? We could see it with our



| Salamat
Altynaliyev

own eyes in the new, perfectly equipped PS Tengiz chemical and analytical laboratory where the quality of oil is monitored by 12 indicators. It was there that we discovered that Tengiz oil is not black in color at all. Chief of the PS Tengiz and PS Atyrau laboratories Yelena Mukhayeva produced a bulb filled with some light, low-viscosity fluid the color of which was reminiscent of “Fanta” drink.

– Several years ago when I worked in Kaztransoil, Tengizchevroil’s oil was even lighter, almost white. Now that deeper horizons are being developed, the oil has become a bit darker, Yelena noted. – Tengizchevroil’s oil is remarkable in that it solidifies only at very low temperatures – around

minus 47 to minus 50 degrees Celsius. It is very good oil!

SSince PS Tengiz is located within a 30-km exclusion zone, it is operated on the rotational team method. The personnel is accommodated in a comfortable rotational village which has an exercise room, a swimming pool and a steam bath. During their workshift, they are taken to the village for lunch.

A newsletter story is not enough to recall all the interesting people whom we were lucky to meet at CPC-K facilities, to describe all the nuances of their work or to provide a detailed progress report for the construction sites. Most of our impressions, as well as the facts we gathered during the visit, went on to “the cutting-room floor”... Therefore, we will definitely return to the subject in the next issue of “CPC Panorama”. ■

*Ekaterina Suvorova
Photographs by the author and
Alexander Detkov*



| Sulfur at Tengiz

According to ancient tradition

THE KAZAKHS HAVE MANY TRADITIONS AND CUSTOMS THAT WILL BE OF INTEREST TO PEOPLE OF OTHER NATIONALITIES. TODAY WE TELL YOU ABOUT SOME OF THEM.



Besik – a habit from the nomadic past

The birth of a child is a great joy and an important event for any family, and the Kazakhs are no exception. The activities that present-day Kazakhs engage in to mark this event appear to be a combination of traditional Soviet and Kazakh national customs.

A few days after the child has been grandly, in the old Soviet way, collected from the maternity ward the family conducts the ritual of putting the newborn baby into a cradle (besikke

салы). This ritual has to do with the aspiration to protect the baby from malign forces. Before putting the baby in for the first time the cradle is sanctified with fire, and then this procedure is repeated daily.

Generally speaking, a besik (which is a portable cradle) is meant for a nomadic lifestyle. It is highly practical and a baby in a besik is always neat and dry since the cradle has a hole and a special appliance for the collection of faeces. These cradles are so fit for travelling that in ancient times children were transported in them during travel. A baby in a besik is warm and well protected from drafts. The mother can sleep peacefully with no need to get up to change the baby (even though now we have diapers!) The ritual of putting the newborn baby in the cradle continues everywhere even if the baby is not going to sleep in a besik later on, given that urban Kazakhs have been long using the usual cots and play-pens.

The ritual is conducted by women, usually the grandmothers or senior relatives, preferably those with children. All the family members are present and the guests bring presents for the new mother and the baby. Having put the baby in the crib, the woman who is in charge of the ritual passes sweet treats through the hole

and asks: Тышты ма? (Has the baby relieved himself?). All the spectators joyfully respond: “Yes, he has!”, thus creating a channel through which vital energy will pass. Children are usually the merriest and most optimistic of those who take part. When the ritual is over the guests are entertained with all kinds of delicacies and sweets.

The beginning of a long journey

The child is meticulously protected for the first 40 days after the birth, and the mother and the baby are not supposed to make public appearances or receive visitors. This period is considered to be dangerous for the infant since his position on Earth is not yet defined, and good and evil spirits are believed to be fighting for his soul. When this dangerous time is over a ceremony of қырқынан шығару is conducted (“walking out of the 40 dangerous days”). The baby has grown out of his first vest (иткөйлек, literally meaning a “dog vest”) and it’s taken off, the baby’s hair and nails are cut and he is washed with special ritual water (40 spoons of water in which salt, silver coins and jewellery are placed). While pouring the water on the baby one is supposed to soothe and talk to him, wishing the child long life, health, prosperity and so on.

The first steps

The next ritual of тұзай кесу (“bind cutting”) is performed when the child starts to walk. Otherwise it is believed that the child will not walk with confidence and will stumble and fall often; its meaning expands to



«Бесікке салу» for Nazir – son of Zhanna Dyusalieva – CPC-K employee



Erbolat and Asemgul sons making their first steps

the child's future life, assuming that the child would stumble along through the journey of life. The ritual is often combined with the child's first birthday. The feast begins with making the binds that are usually plaited from yarn or cloth stripes of different colors to have ала жип – a multi-colored rope symbolizing a border line between black and white. A relative or a family friend who is believed to have his feet firmly on the ground is usually in charge. Traditionally the binds of a girl are cut by a woman, while the binds of a boy are cut by a man. When putting the binds on the child's feet, the person in charge wishes that the child grow up honest and virtuous and tells him not to step over ала жип, which means that he's not supposed to do evil. One can also wish the toddler to have a bright future and to overcome any obstacle in life.

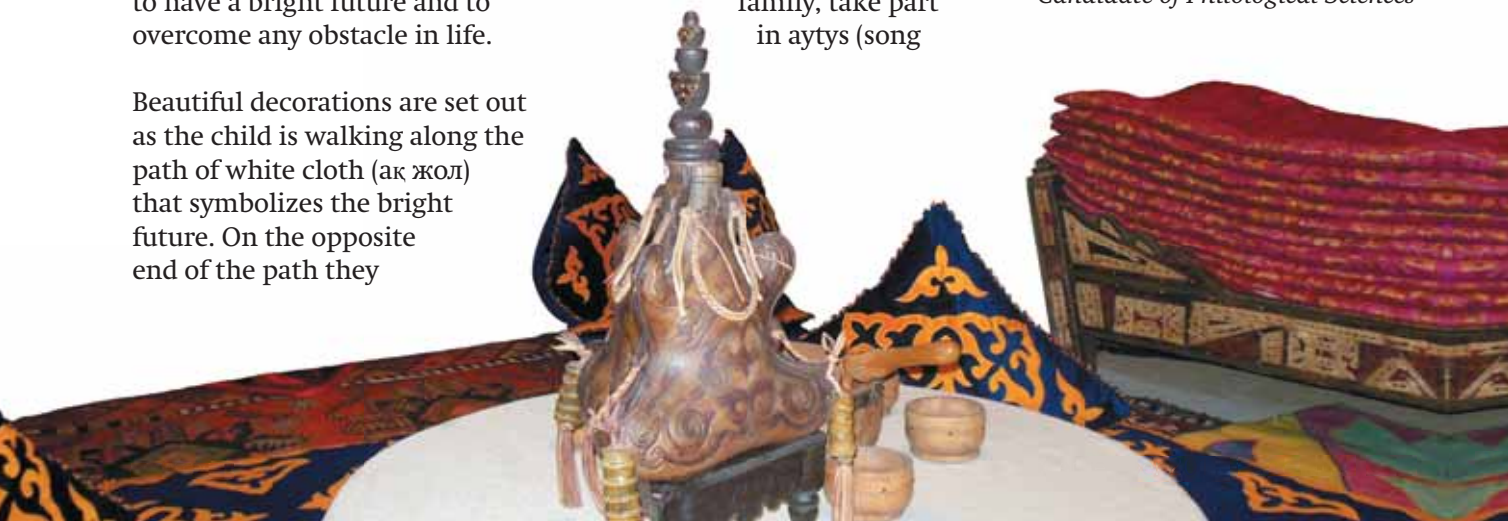
Beautiful decorations are set out as the child is walking along the path of white cloth (ақ жол) that symbolizes the bright future. On the opposite end of the path they

place different objects, such as a dombra (a national musical instrument), money, books, toy weapons for a boy, ornaments for a girl, etc. The person in charge cuts the binds while the guests continue their good wishes. The parents first lead the child by the hand to guide him in the right direction and then let him go. The child has to walk to the path's end by himself and choose one of the objects. The guests cheer and applaud with every step, throwing мамы behind the walking child. Мамы are sweets and coins that the guests later pick up to bring the same joy to their homes. The child's choice receives loud comments. If the child has picked a dombra he should be an akyn (an improvising folk poet and singer) who would sing his compatriots' exploits, praise his family, take part in aytys (song

competitions) and express his people's thoughts and aspirations through music. A girl who chooses jewellery will grow up to be an elegant and gentle beauty. A boy who picks up weapons will be a brave defender of the fatherland who would defend the interests of his people. Kazakh folklore is rich in sayings, poems and songs intended for such occasions and they continue throughout the holiday; the parents usually give a present to the person who conducted the ceremony.

In the families of CPC-K team members, events connected with the birth and growing-up of children are marked in these ways, and colleagues are often invited as guests. Ergali Erbolat, Senior Engineer HSE, and his wife Asemgul waited 16 years to have children – no wonder that the birth of their twin sons was a moment of great joy! The whole team of their co-workers was invited to attend the children's first birthdays and the тұғай кечы ritual alongside family members and friends. More than 200 people witnessed Ansar and Erasyl's first steps, and we are sure that their wishes for the cute little boys will come true! ■

*Marzhan Diarova
Senior translator from Kazakh of
the Atyrau administrative office,
Candidate of Philological Sciences*



Source of Movement

The heart of an oil pump station – the main source of crude oil movement – is a pump house. Its failure-free operation determines, to a large extent, reliability and safety of the entire oil pipeline system performance. Mainline, booster pumps and electric motors – the main pump house equipment – consume on average 95% of all power supplied to the oil pump station (PS). In this context, the issue of selecting a power source is always relevant.

Pump units can be actuated by various kinds of energy: electrical, mechanical or thermal. Depending on that, there are different types of drives, which are to provide pump operation by generating the required rotation. So, an electric motor, gas turbine, diesel engine etc. can be a drive.

Time-Tested

The history of selecting power supply sources and types of power drives for mainline pumps of CPC PSs is closely related to the specifics of the time when Tengiz-Novorossiysk oil pipeline was designed. Rolling blackouts in Russia and Kazakhstan, common for early 90-ies, shaped, to a certain extent, the company main PSs, as stand-alone, self-reliant facilities, little dependent on market conditions and

utilities. The necessity to provide the consortium facilities with power supply independent of potential problems in power grids caused the choice of gas turbine drives. They were made part of the electrical installations at Atyrau PS, Komsomolskaya PS, Kropotkinskaya PS and Marine Terminal.

Today, gas turbine units (GTU) continue to be the main equipment, which provides oil pumping in the CPC pipeline system. Base model of all used turbine units is dual-fuel engine SGT-100 produced by SIEMENS. Nominal capacities of selected units from 4.7 MW (for turbine generators) to 4.9 and 5.7 MW (for turbine pumps) enable application of the units in a broad range of loads, thus ensuring the required crude oil pumping volume. Dual-fuel (liquid and gas) capability provides constant oil pumping mode in case of potential short-supplies of one of the fuel types. At that, switch-over from main gas fuel to backup diesel one is automatic.

Present and Future of Gas Turbine Units

Currently, the CPC facilities operate seven twin-shaft turbines SGT-100-2S, as drives for mainline pumps, and eight single-shaft turbines SGT-100-1S, as drives for electric generators. But in the not distant future the fleet of gas turbine units will be almost doubled. Such decision was taken by the consortium specialists and management due to a positive operating experience and streamlined maintenance. Eventually, after completion of the oil pipeline system throughput expansion 18 mainline turbine pumps, six main and four backup turbine generators will operate in Russian and Kazakhstan. Aggregate capacity of CPC gas turbine units will reach 146.4 MW.

One of the most important parameters of modern GTU excellence is low level of harmful emissions. High environment indicators of the consortium-used units are achieved due to application of the latest work process technologies in combustion chambers of gas turbines.

In order to maintain the rated level of the state-of-the-art equipment having high operation risks, the consortium executes long-term contracts with the turbine manufacturer. This is a world-wide practice. The bulk of the work related to design, operation properties and characteristics improvement was undertaken by the general contractor for maintenance and repair of gas turbine units. Meeting the CPC requirements of increasing the crude oil throughput, specialists of SIEMENS turbine manufacturer in Lincoln (UK) responded promptly to the necessity of expanding the capacity of their units. On the basis of the existing »



Oleg Sadovsky

4.9 MW turbines, new 5.7 MW units were developed and produced.

Human Factor

Considerable efforts were required from consortium specialists before “gas turbine technologies” proved their

value. Company employees had to master the equipment completely new to them. The situation was aggravated by the fact that after commissioning the units operated for a long time on liquid fuel, which was not of top quality, in off-design modes of low loads, thus causing GTU malfunctions and high failure rate.

Under the circumstances, it was necessary not only to take certain technical measures, but also to revise the staff issue. The first one to acknowledge this necessity was Deputy Regional Manager, Marine Terminal Oleg Sadovsky. Being an experienced oilman and administrator, he made a managerial decision, which subsequently changed the situation to the better in all regions of the company. Marine Terminal hired chartered gas turbine engineer Alexander Astashkin, who founded the gas turbine sector in the CPC operations. Thanks to his knowledge and experience, as well as support of the entire Marine Terminal staff (mechanics,

electricians, instrumentation and IT specialists), the number of turbine generators failures and emergency shutdowns dropped, relevant maintenance was streamlined, first improvement ideas appeared.

Slightly later, CPC Western and Central Regions hired turbine maintenance specialists Vitaly Romanov and Murad Agadzhanyan, Alexander Eremin started to service Kazakhstan turbines. United community of engineers emerged, who managed within a short time to organize and consolidate the available intellectual resources to tackle complicated issues of GTU operation.

Nowadays, 10 years after commencement of CPC pipeline system operation these specialists, as staff employees holding the positions of senior and lead engineers for GTU operation and repair, continue to work for the consortium enjoying well-deserved recognition and support.

From Turbines to Electric Drives

With the passing of time, Time makes its adjustments in corporate power supply. In 2010, after the Expansion decision was taken, all designed PSs, except for A-PS-4A (due to its proximity to Makat-North Caucasus gas pipeline), were to be connected to external power sources, the safest type of company-used energy resources, and to be equipped with electric-drive mainline pumps.

Alexander Astashkin





Old gas turbine plants becoming history

Changes in the power supply approach manifested themselves at the existing facilities as well. So, in 2012 Marine Terminal of the consortium changed over to external power supply, thus halving its environment impact. The existing turbine generators were put out of operation to serve as backup. Currently, similar work is in progress at Atyrau PS.

It was decided to complete electric drives of pumps of the consortium PSs under construction with SIEMENS electric motors, which are considered to be highly reliable due to a unique assembly technology. They meet the international standards, are made of high-quality steel, have high efficiency and improved cooling system. Besides, they are simple to operate, maintain and are low-noise. ■

Ekaterina Krapivko

FRY FLY!

TO AVOID OVERHEATING, THE STURGEON FRY IS RELEASED INTO THE WILD BEFORE SUNRISE OR AFTER SUNSET

The Fish Kingdom

Finding our way to the JSC Dinskoy Fish Hatchery on the federal M4 highway proved no easy task. After being lost for a considerable while, having driven past the petrol station and a string of roadside cafes, and extricating ourselves from the curiously entangled turn-offs, a group of experts from JSC CPC-R arrived at the outskirts of the Plastunovskaya village where the hatchery is situated. Dozens of special tanks, several stocking ponds, an office building (also used to accommodate guests, both expected and unexpected), an impressive farm-yard with ducks, geese and rabbits – that is the scene that greets visitors to this successful and well-known Kuban enterprise, with 10 years' experience in sturgeon farming.

More than 10 companies in the Krasnodar Region are involved in the sturgeon-farming business. However, most of them, as the chief expert of Dinskoy Fish Hatchery Sergey Miroshnichenko tells us, are in it for commercial production, not for the rearing of sturgeon fry. – All in all, – he says, – fish-farming in Kuban was not at its best at the end of the last century. Out of six state hatcheries only three have survived with two breeding stocks between them. The situation is a bit better now – thanks to the efforts of the Azov

and Black Sea Federal Fishery Agency and a group of local fish-farming enthusiasts sturgeon breeding is on the increase again.

As we wait for members of the state commission on fish-farming to arrive, the Head of the Hatchery Vladimir Dubovsky tells us about the stages in sturgeon-farming:

– First we breed the stock in ponds and in spring – during spawning – male and female fish are assessed for their reproduction capacity. Their eggs are taken and placed in a special machine where the fry are hatched, then transferred to tanks and, when the time is right, they start feeding on zooplankton which means having healthy natural food that helps them gain weight. When the fry specimen reaches the weight of 2 gr it is ready to be released, well-prepared by natural nutrition to survive in the wild. They are distributed into »



Fly high, our fry!



Fry get under way

different tanks to be counted, and off they go! – Vladimir Anatolievich has been through this process a dozen times so he knows all the tricks of the trade.

– Why the initial plan of letting fry out before dawn, somewhere around 6 a.m., what's with all that secrecy? – I'm curious to know while talking to

qualified biologist-cum-chief financial officer at the hatchery, Andrey Gulidov, who is lovingly showing us an adult sturgeon. The sturgeon is so fidgety and strong that none of the guests manages to hold it long enough to take a picture. But in Andrey's arms it sits as still as a kitten.

– There is no secrecy, – he replies. – It is just an established practice to let the fry out either early in the morning or late in the evening, after sunset. Otherwise with the sun out and the temperatures up to 40 C they get overheated in the fish-carrying trucks and die.

Count your sturgeon

Finally the commission arrives, comprised of representatives from the regional bodies of the Federal Fishery Agency of the Ministry of Agriculture of the Krasnodar Region. Brushing aside traditional offers to try the fish soup, ukha – “later, later...” – the Head of reproduction and acclimatization of the aquatic bio-resources of the Azov and Black Sea Board of the Federal Fishery Agency and the

Chairman of the commission Nikolay Kucherov is swift to organize the process and personally counts the fry. With that completed with the utmost accuracy, a number of workmen take the baby fish in buckets to the special fish-carrying trucks. The process is carefully observed: the specialists from CPC-R, while not being part of the state commission are nevertheless entitled to observe too by virtue of their corporate power of attorney. Alexander Minin, chief environmental safety engineer with a degree in biology acknowledges that:

– Artificial reproduction is well organized at Dinskoy. We have checked the hatchlings for dead body count and verified the compliance of the counting procedure with the official method of universal enumeration. One has to admit that this method, endorsed by the governing board of the Russian Fishery Agency, is the most demanding but the most precise: all produced quantities are accounted for which is only reasonable for the valuable sturgeon breeds.

It is essential to make sure that the air temperature on loading and during transportation is not too high and that the oxygen pumps are working properly in the fish-carrying trucks which have to cover about 50 km to the place where the sturgeon will be released into the River Kuban.

This fish farm has its own sturgeon genetic database that will allow scientists, even



many years later, to clearly identify grown-up sturgeon caught in the sea as coming from Dinskoy Fish Hatchery. There is something inexplicably joyful for an environmental specialist in this tangible result of the efforts that so many CPC employees have made to sustain such a delicate biological balance, – Alexander confesses.

Averting the danger

With the help of the public the current protected species status of the sturgeon is not inevitable in the future.

– I'm so excited every time that the fry flies into the wild, – Nikolay Kuchеров shares his joy. – You know, we made an amazing discovery recently. On the river Protoka (one of the tributaries of the Kuban) after many years of having to catch the predatory fish before letting the hatchlings out we could finally abandon the practice: it appears that the numbers released last year and the year before have in fact overtaken that part of the river which is now brimming with sterlet.

Unfortunately we are still very much behind the Soviet rates of production. Between 2009 and 2012 the growth rate was 4,5 to 12 million specimens but it has declined in 2013 due to the federal budget cuts. So it is good to have organizations like CPC-R taking part in the renewal of aquatic bio-resources, and especially funding the process. With the help of businesses we manage



about 1-1,2 million specimens per year.

Due to our joint efforts we have overcome the dreadful setback in reproduction of the 1990s and are now steadily producing six endangered species of fish (beluga, Fringebarbel sturgeon, sterlet, Black Sea salmon, Black Sea roach, and shemaya) in growing numbers, – concludes Nikolay Kuchеров.

Tight and bright

Under the cover of darkness the KAMAZ trucks with the fry on board set off one by one on their way to the village of Elizavetinskaya, where they will be released into the river. Having barely avoided getting stuck in the mud (after recent heavy rains), the fish-carriers arrive on the river bank. The hatchery staff quickly unroll special hoses through which the baby sturgeon rush into the dusk rapidly covering the waters of the Kuban. We were happy to see that our transportation concerns were unfounded – the fry were fit as a fiddle after the trip. It was now our turn to travel back in the night, negotiating a washed-out and bumpy road. We all wished the “graduates” of the farm well as they settled down in the new waters, and fast growth before they reach their maximum weight. Fly high, our fry! ■

Alexander Detkov
Photos by the author

1 – At the fish farm
2 – Alexander Minin
3 – Andrey Gulidov



Fire-fighters in action

A mock oil spill successfully cleaned up

AN “EMERGENCY OIL SPILL” OCCURRED AT KP 1135 KM OF TENGIZ – NOVOROSSIYSK TRUNK OIL PIPELINE ON MAY 23. CONTAINMENT MEASURES WERE TAKEN BY A TASK FORCE FROM CPC WESTERN REGION AND STAVROPOL KRAI EMERCOM DIVISION.

Priority measures

Early in the morning, the CPC’s Supervisory Control and Data Acquisition (SCADA) system detected a steady pressure decline drop in the area of the Tengiz – Novorossiysk pipeline’s intersection with the Yegorlyk river diversion channel. The Consortium’s dispatcher ordered transmission pumping stopped and notified the Company management and chief dispatcher... That was how a comprehensive joint practical exercisedrill of CPC and the Stavropol Territorial Krai Emercom Division began. The

focus of the exercise drill was in response to an “emergency oil spill” near the village of Ptichye. Pipeline security mobile squads and the task force of the emergency response station arrived at the “accident” location to determine the scale of the event and to take priority measures. Simultaneously, the main forces of the Starstroy Emergency Response Station started assembling. The alarm response squad of the Izobilny city police force together with the CPC security force successfully seized a group of “criminals” who tried, in vain, to escape on a tank-truck.

Under the guidance of Stavropol Krai Emercom Division, a joint headquarters for emergency response was set up including representatives from the Emercom, CPC and Starstroy Emergency Response Station. In the meantime, fire teams from the Izobilny district arrived at the site and started combating the “fire” caused by the ignition of the “spilled oil”. Simultaneously, the local population was evacuated.

According to aerial reconnaissance performed



Deployment of containment booms and installation of a temporary storage tank

using a MI-8 helicopter and an unmanned aerial vehicle, the bulk of the “spilled oil” was onshore, but some of it had flowed into the Yegorlyk river diversion channel, and active pollution of the shoreline was taking place...

Spill clean-up

Now it was time for the main forces of CPC-R and the Regional Center for Rescue and Environmental Emergency Response to appear on the scene. They contained the “spill”, collected oil from the ground, provided a temporary seal on the pipeline, and removed the polluted soil. Volunteers from among the local population came to help the task force engaged in shoreline cleanup. Specialists from the Stavropol Environmental Laboratory were there too, efficiently taking soil, water and air samples and doing their express-analysis for petroleum content.

In the meantime, three lines of containment booms were deployed, and oil was collected from the water surface with the help of skimmers and transferred into quick-assembly tanks. The shoreline was cleaned

up and the pipeline inspected by Emercom divers. Then, the collected “oil” was pumped back into the pipeline in the direction of the Marine Terminal’s Tank Farm. Specialists restored the pipeline’s integrity and inspected welded joints. After the inspection returned a “no defect” result, the pipeline could be restarted.

However, accident mitigation was not without its “safety incidents”: a man from the fire-fighting team suffered a “burn” and another member of the response team was “injured” during the deployment of containment booms. Both were given “first aid” and “taken” to Stavropol clinics.

Culmination

The work now over, and the “spill” cleaned up, the time had come for the exercise to enter its culmination phase. The teams line up for a debriefing and awards ceremony. To a background of vigorous applause, specialists from CPC, the emergency response stations, fire teams and the disaster medical service were given honorary certificates. And the volunteers,

who had demonstrated high responsibility and enthusiasm, were not forgotten either. CPC managers, Emercom officers and representatives from the local administration shared their impressions with journalists:

– The drill is part of the CPC policy which has primary focus on safety and environmental protection, – says Rick Spivey, General HSE Manager. – In addition, one of the reasons for conducting the drill is that this is an area where PS-5 is being built. Therefore it is important for us to make sure ourselves and demonstrate to local residents that they are safe and that the future pump station will have no environmental impact.

Representatives from the regional administration who watched the drill noted the high professionalism of CPC and Emercom specialists as well as their excellent coordination – something which is the most important in any emergency where decisions have to be made promptly and immediately implemented by a joint team effort. ■

Ekaterina Krapivko



Richard Spivey, Head Manager, HSE (right) and Izobilny District Administration Deputy Head Vladimir Kovreshkin



Pipeline integrity restoration



Audit at A-PS-4A, from left to right:
Constantine Ryagin, Julia Starodubets,
Daniyar Satkanov

In the hot construction season...

IN AUGUST AS PART OF COST AND SCHEDULE MANAGEMENT AUDIT INITIATED BY CPC EXPANSION PROJECT INTERNAL AUDIT GROUP IN ACCORDANCE WITH THE AUDIT PLAN FOR 2013 WE VISITED TWO CONSTRUCTION SITES IN THE RUSSIAN FEDERATION: PS-3 AND A-PS -4A.

The audit was attended by auditors from CPC Internal Audit and Pricewaterhouse Coopers as well representatives of CPC Shareholders: ENI and BG. The audit team was accompanied by PS RF employees involved in the process by CPC Project Management Team.

We asked auditors Constantine Ryagin (CJSC CPC-R) and Daniyar Satkanov (ENI):

Constantine and Daniyar, you and your colleagues have been auditing cost and schedule management process in Chernomortransneft management company and construction contractors in

Russia for a number of weeks. You visited the office of the management company in Novorossiysk and construction sites: PS-3 in Kalmykiya and A-PS-4A in the Astrakhan region. Please share your impressions with us and CPC Panorama.

Constantine Ryagin:

For me this is not the first audit of Expansion Project construction projects and contractors and I would like, first of all, note that in spite of the busy season of construction, contractors' specialists took the audit positively. They met with understanding the position of

the auditors representing the interests of CPC management and shareholder and carefully listened to their expectations and vision of problems that can be solved only through joint coordinated efforts.

We faced a difficult task: analyze cost and schedule management and controls and related reporting in accordance with a multi-stage system of information reporting and levels of control: Construction Contractors > Project Management Contractor > PS RF Coordinator's Group > other involved CPC groups > Shareholders. Upon completion of the survey of representatives of construction companies and the PMC we drew their attention to some points that would be worth improving. Our recommendations were taken on board.

Daniyar Satkanov:

For me as a shareholder representative the visit to these facilities has left a special

impression for several reasons. This is my first audit of Russian construction sites and, I must confess, I have made a note of a few important points. This is high construction activity on sites, good work progress, highly qualified workers and engineers of the contractor, their considerable experience and commitment to the speedy completion of pump stations with the right quality.

In addition to auditing cost and schedule management process my task was to identify potential



Main Filters site at PS-3

hazards and HSE risks. In terms of safety the sequence of actions at the constructed pump stations has been clearly worked out. Before entering the site we were briefed on the rules of conduct and safety on the construction site. During our visits to pump stations from start to finish we were accompanied by an HSE representative who took care and told us how to safely move from site to site. All workers and engineers used complete sets of personal protective equipment. Everyone worked in hardhats, safety glasses, boots and gloves. Both on PS-3 and A-PS-4A all trenches and excavations were barricaded with warning tapes, sensors were used to indicate wind direction and speed and gas analyzers to monitor gas concentrations in the area. Working under the scorching sun in a thirty-degree heat every worker had about 5 liters of drinking water. I checked availability of medical teams on duty around the clock, ambulances and necessary



Mud Strainers at A-PS-4A

firefighting personnel. During the audit, I personally witnessed that on the construction sites in the Russian Federation they actively implement Incident and Injury Free. Such respect for the employees and favorable conditions on construction sites is definitely a positive fact, which I will certainly report to my management. ■

Recorded by Alexander Detkov

Everything is under control!

AUDITS AIMED TO CHECK PLANNING, COST AND SCHEDULE, RISKS AND MITIGATION ACTIONS, ALL ACTIVITIES THAT CONSTITUTE PROJECT CONTROLS, FOR ME ARE OF A PARTICULAR IMPORTANCE. THE PURPOSE OF SUCH AUDITS IS TO MAKE SURE THAT CONSTRUCTION CONTRACTORS PROPERLY PLAN CONSTRUCTION AND INSTALLATION ACTIVITIES, CORRECTLY REFLECT THEM IN THEIR SCHEDULES AND PRUDENTLY SPEND THE BUDGET ALLOCATED FOR THE PROJECT WHILE MINIMIZING ALL THE RISKS.

During August the auditors examined planning and cost reporting at two of the Phase 2 construction projects: PS-3 and

A-PS-4A. The audit results will be included in a report, which will then be submitted to CPC Management and Shareholders.

And here is my task: not just answer all auditors' questions but also help them to understand the very essence of organization and functioning of Project Controls process at the Russian pump stations.

Shareholders keep their finger on the pulse of construction

Project Controls is an important tool in the hands of CPC Management that gives them both "eyes and ears". That is why such audit for me is a kind of a test that will show how the discipline has been developed, implemented and the data flows »



Julia Starodubets is heading the Project Controls discipline for the RF PS Team. During the cost and schedule audit at the pump stations under construction, she coordinates interfaces between Project Management Contractor (PMC) OJSC Chernomortransneft, construction contractors and auditors.

through the project organization as a part of a chain. This starts with a plan/actual analysis of the construction contractors and ends with a consolidated report and analysis to CPC Shareholders, the final data for which is reviewed and submitted by RF PS Team.

The Expansion Project RF PS Team's Project Controls specialists ensure control over and the interaction between construction contractors, OJSC Chernomortransneft and the CPC-R Project Leadership Team in the following main areas, but not limited to: planning, budgeting, scheduling, cost control, progress measurement, management reporting, forecasting of expenditures, risk management and mitigation, with final consolidation of data for reporting to Shareholders.

Report: exact and reliable

The important tools in our work are work planning and reporting. The planning, progress measurement and control on the construction sites are based on detailed daily reports that show planned scopes of work in physical terms (for example meters of pipes, cubic meters of concrete etc.) and daily updates on the works actually performed.

The control process starts with the information on the actual scope of work performed by the construction contractors and reflected in their reports, then the percentage complete is checked and confirmed by Chernomortransneft Management Company and forwarded to RF PS Team for verification. After the reports have been promptly analyzed by our employees and received final approval from RF PS Team's Coordinator they are submitted to the CPC PLT.

Data provided in the daily reports is the basis for the formation of weekly and then monthly progress reports for the construction sites. The requirement is to obtain from the construction sites as complete reporting as possible at the most detailed level of works (excavations, foundations, etc.).

Tie-ins on schedule with no risks

During construction there are many factors that impact the work progress on sites including those issues that require the support and involvement of RF PS Team in cooperation with the PMC and construction contractors. The identification

of these risks is continuously performed and closely reviewed and controlled, particularly during the most critical phases of the Project.

This applies in particular during the planned shutdown of the existing CPC pipeline system to tie-in newly commissioned facilities when timely work completion by construction contractors is extremely important to restart the pipeline at the specified time.

In recognition of the importance of this activity we conduct a site based risk review with the PMC and construction contractor. The review will



Pipeline scheduled shut-down

determine the cost, schedule, industrial and HSE risks for the work scope and their impacts on the work are assessed and prioritized. Additionally the possible mitigations to reduce or remove the risk are identified and implemented. This proactive approach has been shown to deliver shut-down and tie-in work scopes within the established time schedule and in compliance to CPC quality and without accidents and injuries! ■

Julia Starodubets

CPC and Ptichye: Dimensions of Collaboration

A NEW PUMP STATION (PS-5) IS BEING CONSTRUCTED AS PART OF THE EXTENSION PROJECT WITHIN THE BORDERS OF IZOBILNENSKY DISTRICT OF STAVROPOL KRAI, NOT FAR FROM THE VILLAGE OF PTICHYE. LOCAL PEOPLE ACCOUNT FOR HALF OF THOSE INVOLVED IN THE CONSTRUCTION WORKS: CREATING ADDITIONAL JOBS IS ONLY PART OF THE COLLABORATION BETWEEN THE VILLAGE AND THE CONSORTIUM.

"Lenin Avenue"

The grand opening of the village's main streets after the completion of laying pavements on them took place in the Ptichye village of Izobilnensky district of Stavropol krai on May 28. The work had been conducted with

the support of Caspian Pipeline Consortium.

The traditional ribbon was cut by V.A. Shurupov, First Deputy Chairman of the regional administration, and A.S. Khardykin, CJSC CPC-R Deputy Director General Russian Federation Government

Relations. The day turned out to be a truly festive celebration, with folk songs and harmonica music, as local residents gathered to cheer and express their gratitude.

Nobody even thought of pavements when they started building this oil pump station

The appearance of pavements has become a happy event for all of them. Previously there were no pedestrian zones so that people had to walk along the road itself alongside the stream of traffic, which was extremely dangerous. Now there are electric lights, while convenient sidewalks are separated from the highway by fences. Every pedestrian crossing is striped. You could judge the scale of change by the informal name the locals have given to one of the new streets – Lenin Avenue. »



Ceremonial opening of new pavements



Excellent work!

Retrospective review

The village of Ptichye has an unusual history. It was founded in 1832 by settlers from the older provinces of Russia and received its name from a nearby lake where there were lots of birds.

Another lake – Solenoye (“salty”) – is 10 km away from the village and is still considered a place of interest. It’s all white, and its bed is cracked and has hardly any water during the hot months, but it’s rich in the salt that has saved villagers more than once. In the past the locals would have to fight each other for the right to collect the first (and purest) salt, and the villagers would usually win thanks to one of their number, who was nicknamed “Bakhyr” (from the Kalmyk word meaning bogatyr, or warrior). During the famine years of the 1930s salt could be traded for other essentials such as fresh water, grain and soap, a tradition that was remembered during the times of deficit of the 1990s.

The mud of Solenoye Lake has healing qualities, and since 1997 the area has become another nature reserve of the Stavropol

Region. People from the whole region are attracted by this black substance, something like sour cream in its consistency, with the smell of hydrogen sulfide. To improve their physical, and sometimes mental health tourists bury themselves in the lake mud up to their heads.

The cooperation between the CPC and Ptich’ie residents first began in the 1990s during the pipeline construction

The first villagers bred sheep and practiced arable farming. Legend has it that their neighbors used to call them “yellow ears” because of the color of the cuffs on their boots that looked like hare ears. People used to put a wooden spoon in their boots, and use it when eating on the steppe. In every village the boot cuffs were of a different color.

Yellow is the distinctive local color of Ptichye today, and the main monument of the village is painted in that color. Another reason for this choice of color, other than such legends, was the love of the villagers for the lazoriks, the sweet-scented

yellow flowers, now a protected species of fauna, which carpet the local fields every spring.

The present and future, together with CPC

More than 5,700 people live in Ptichye today. They are mainly employed at the “Yegorlytsky” state farm that the CPC saved from bankruptcy at the beginning of the 2000s, and they also work for the “Galion” company and some have private farms. Not long ago “Ptichy” state farm ceased to exist. As for the younger generation, the main employment hopes are connected with the PS-5 pump station that is under construction.



Vladimir Ilyich Kozlov

The cooperation between CPC and Pttyche residents first began in the 1990s during the pipeline construction, when locals were employed as auxiliaries in the construction camp. As the partnership between the village and the CPC grew, the attitude of the local people towards the Company evolved.

– A change definitely took place, – says the village head Vladimir Ilyich Kozlov. – At first people thought that this pipe was bringing “predators” towards us, who would dig the whole place up and then leave. Now the attitude towards the CPC has changed radically. Now people understand that the Consortium is trying to make their life better and not just profit financially itself. For example, nobody even thought of pavements when they started building this oil pump station. But when I came to the Company representatives with the idea they responded immediately and allocated what we thought was a huge sum of money.

– More than that, people started coming in search of

employment as soon as they first heard of the pump station construction, – adds Vladimir Ilyich. – Around 70 people left their contact information. Of course it’s a blessing for people when such working positions

This June as part of the agreement between the Stavropol Region administration and the JSC CPC-R a charity contract was signed to build an outpatient clinic in the village. It will take the place of the old polyclinic and will be fully equipped with modern medical equipment

appear, especially those that are well-paid. As for the safety issue of the pump station being in the vicinity, we had this question sorted out during the emergency oil spill response drill in May. The Consortium team runs like a well-oiled

machine and the locals needed to see that. You are safe when you have such equipment and such professionals that can handle any situation.

The cooperation between the CPC and Ptychye continues. This June as part of the agreement between the Stavropol Region administration and the CJSC CPC-R a charity contract was signed to build an outpatient clinic in the village. It will take place of the old polyclinic and will be fully equipped with modern medical equipment. CPC is giving 65 million rubles towards the execution of this project.

– This future clinic is of great importance to us, – points out Vladimir Ilyich. – Our polyclinic is on its last legs, it could just collapse any day now. And I don’t have to tell you that only those villages survive that have clinics, schools and other infrastructure. Having this new clinic with all this modern equipment is our great motivation for further development. ■

Ekaterina Krapivko

CPC Opens New Regional Offices

In July, the General Director of CPC visited a recently launched company office in the city of Elista, where he learned about the working conditions for regional employees, and had a meeting with journalists. Setting up and registration of an office in the capital of Kalmykia was prompted by the increased operations of the enterprise on its territory within the framework of the Expansion Project.

The same reason induced JSC CPC-R to register an office in the town of Stavropol. Very soon the company employees in this town will start working in comfortable and attractive premises.

In August, the personnel of another regional division of CPC – Krasnodar city office – had a house-warming party. They moved to a newly built office center equipped to the highest standards for office buildings of this category. ■

Dmitry Gerasimiyuk



Photo: Ulyumdzhii Chidzhiev, Representative, Government Relations, Republic of Kalmykia, General Director of the Consortium Nikolay Brunich, and his deputy for relations with the RF Government Aleksei Khardykin, during their visit of the new office in Elista.

We welcome a challenge

WORKING IN THE OIL SECTOR IS CONSIDERED TO BE A MAN'S LOT, BUT THAT IS NOT ALWAYS TRUE. WOMEN DO MUCH OF THE DIFFICULT AND METICULOUS WORK THAT IS CRUCIAL FOR THE FUNCTIONING OF A DEVELOPING PIPELINE COMPANY. TODAY WE ASKED A FEW EMPLOYEES TO ANSWER THE QUESTION: "WHAT IS IT YOU LIKE ABOUT YOUR JOB?" THESE ARE THEIR REPLIES.



Raisa Bulkina,
Internal Audit Manager,
CPC-R:

– I love my job because it gives me the chance to take part in perfecting the processes and mechanisms of internal control systems and help to achieve target goals at our international company. Working here allows me to learn from the experience of the biggest Russian, Kazakh and international companies represented by the CPC shareholders.

My co-workers and I have the opportunity to interact with many colleagues from both Moscow and regional offices while sorting out a wide

range of issues. We apply our knowledge and experience to render consultative help and support to the administration and the staff of CPC. The conduct of an audit of CPC contractors is one of the main functions of internal auditing. We visit different regions where work is in progress. That is exciting and very important – we all have to be at our best and maintain our company's high status, since auditors reflect the company's image.



Elena Zaitseva,
Lead HR Specialist,
CPC-R:

– Why do I like what I do? First of all because my work is very diverse. I have to deal with questions in multiple fields, such as law, finance, Adlerian psychology and interpersonal relationships. Being needed by everyone all the time makes working with personnel both attractive and difficult. And there's more – I doubt that many people know what it means to successfully fill a vacancy. There are numerous candidates whom you have to listen to, assess, and accept or refuse (without making that person feel totally worthless: it's just that he's unfit for this particular position). Next you have to show the manager why it would be viable to take on a particular candidate. The higher the position, the more responsible you have to be while assessing an applicant. As a result you hire exactly the person the company needs, and it makes you feel great. Of course there's routine work, but in personnel management it goes hand in hand with creativity, and one has enough variety in both parts.



**Olga
Goryushkina,**
*Training Specialist,
CPC-R:*

– I like my job because of the educational and developmental possibilities it gives. Just a few decades ago an university education provided one with enough knowledge to last a lifetime. In the modern world one has to constantly learn something new to be able to call oneself a professional. Moreover, companies have to pay attention to the professional growth of their employees if they want to make it to the top in the market, and universities can no longer guarantee the necessary level of education. I majored in workforce management, and during my career I have dealt with various personnel issues, such as recruitment, staff records management, assessment and training. The field of learning and development turned out to be exactly what I was looking for in terms of the possibility both to refine myself and to contribute to the development of CPC staff's skills. Doing what



**Elena
Vereschagina,** *Document
Control Specialist, Pump
Stations (RF) Group:*

– My graduation thesis at university was dedicated to project financing, and here I am working with the CPC Expansion Project, one of the biggest pipeline projects. This is a position of great responsibility. An important part of my job is to send all the correspondence to the contractor on time even in urgent cases, and to make sure that all the problems are being solved on schedule. The scope of incoming and outgoing documentation every day is huge, and we need quite a number of specialists to do this paperwork. If you want to successfully handle all the tasks set before the document control managers of the CPC Expansion Project, you have to be attentive, responsible, quick, assiduous, patient, and possess all the necessary information to rapidly help your colleagues in document search. I find it easy to work in the CPC team because I'm surrounded with competent, amiable and fun



**Kristina
Levchenko,**
*Junior Contracts Specialist,
GM, Business and controls,
CPC-R:*

people of all ages.

– What is it I love about my job? First of all it's the fact that we have a great close-knit team. When I came to work at CPC, I found new friends here. When you have cooperation and understanding among staff members it helps us to achieve better results. In a team like ours one always has someone to ask for help or advice, and having common goals helps to find quicker solutions and understand your colleagues better. This is crucial when talking about working in a contract team because it's the contract experts who take into consideration other departments' opinions, and try to find a common solution to this or that problem. You could say the contract group accumulates the opinions of other departments, and so mutual understanding in a team is of primary importance to us. ■

Safety culture starts at the top

IN JULY, A SEMINAR ORGANIZED BY THE HSE GROUP OF THE CPC EXPANSION PROJECT AS PART OF THE INCIDENT AND INJURY FREE PROGRAM (IIF) WAS AIMED AT DRAWING THE ATTENTION OF TOP MANAGEMENT TO THE IIF CULTURE.

The seminar was attended by representatives of the shareholders, the management of the CPC Main Section and the Expansion Project, representatives of the Project Management Consultants and contractors. The goal was to better understand the importance of the IIF culture for staff safety and production outcomes.

“This is not to be treated as sheer luck,” he emphasized. “There is a great difference between striving for neat statistics and the commitment to providing everyday safety for the Project staff. Our main goal today is to study the importance of the IIF culture and the management leadership in it. The Project currently employs 5,000 people, all of whom want to be sure

The seminar covered the questions of the safety culture evolution and of the possible application of an integrated approach to create a new perception of it. Participants became aware of safety as a personally significant challenge that makes all staff wish to achieve great results in safety control. It is important to understand that high safety scores contribute to business success.

The components of the IIF culture were discussed both in theory and in practice. While interacting with one another participants of the seminar had an opportunity to act as leaders of the IIF program and to decide on practical steps to be taken in demonstrating their



William Simpson, the CPC Deputy General Director, Projects & Engineering, told participants that the Expansion Project had a record of 150 days (over 5 months) of work without incidents leading to loss of production time.

that their managers are leading the way in the IIF program. They need to see their bosses consistently acting in accordance with the IIF culture. It is therefore crucial to understand the essence of that culture and to know how to be a leader in it.”

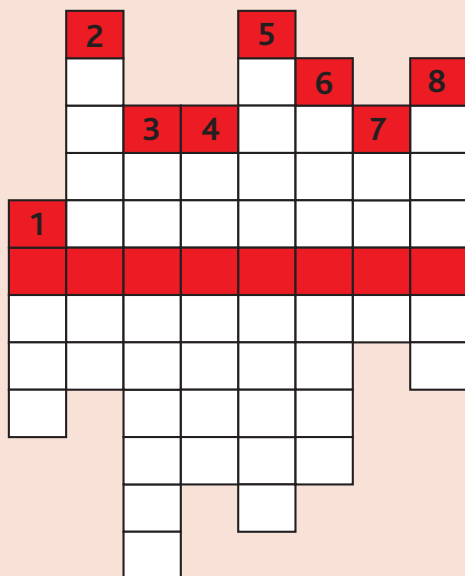


personal dedication to that culture in their respective work environments. ■

*Mihail Ivanov,
IIF programme coordinator,
CPC Expansion Project*

Brain Jogging

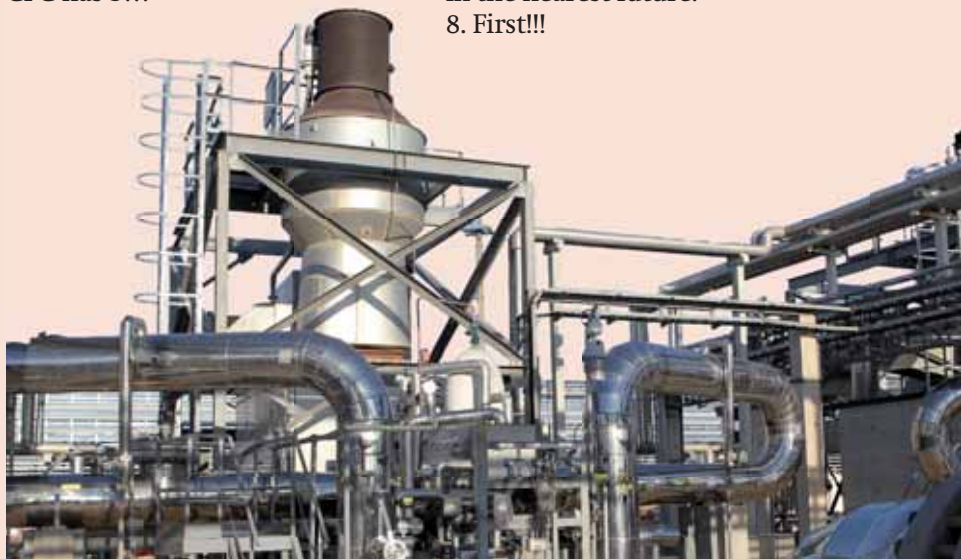
The author of this crossword puzzle, Alexander Barkov, is a specialist of Regulatory Affairs Group. He belongs to a special category of people who use a creative approach in everything they do. Alexander believes that anyone working in the oil sector – whether they are directly involved in oil transportation or not – should know the basics of this process, get into details and grasp the



essence. Dear readers, if you answer the questions prepared by Alexander, you will be able to put together the key word of the crossword puzzle, and refresh your professional knowledge. Please smile as you do it.

1. A mechanical device using suction or pressure to raise or move liquids, compress gases, or force air into inflatable objects such as tyres.
2. A regular stopping place on a public transportation route, especially one on a railroad line with a platform and often one or more buildings. Currently now CPC has 5...

3. The action of becoming larger or more extensive. CPC becomes larger or more extensive...
4. A place giving temporary protection from bad weather or danger.
5. Conformity.
6. The totality of the separate elements of sensation which are then organized by the active mind and conceptualized as a perception of an external object.
7. A heavy armored fighting vehicle carrying guns and moving on a continuous articulated metal track. CPC has 4 near Novorossiysk and will get 6 more in the nearest future.
8. First!!!



Professional Jokes

- The price of oil is going down!
- So that means petrol is, too?
- Petrol, no.
- Why not?
- I don't know, probably in Russia we don't make petrol from oil.

A gas station in the desert of Africa. With a large sign: "Fill up your tank, and all your cans! The next three gas stations you can see are all mirages!"

After the end of a Germany-Saudi Arabia football match, when the German side beat the Saudis 8-0, a Saudi sheikh in the stands turns to a supporter of the German team: "Remind me, how much did a litre of petrol in Germany cost 90 minutes ago?"

For 40 years Moses led his people through the desert – and managed to find the only place where there was no oil.

An oil man from Yamal comes to Paris, goes up to the Eiffel Tower, and remarks with surprise: Fancy that, it's the third time I've been here, and they still can't find any oil.

- I heard you've broken up with your girlfriend. What happened?
- The thing is, I don't have a place of my own.
- What? But your uncle's an oil magnate. Surely you told her about him?
- As soon as I did, she left me. Now she's my aunt.

Answers

1 – pump; 2 – station; 3 – expansion; 4 – shelter; 5 – compliance; 6 – manifold; 7 – tank; 8 – safety.

CPC Contacts



CPC-R, Moscow Office

Business Complex "Legion",
4th floor,
B. Ordynka Str., 40, building 4,
Moscow, 119017, Russia
tel: +7 (495) 745-87-70
fax: +7 (495) 745-87-72
e-mail: Moscow.reception@cpcpipe.ru

CPC-K, Astana

Hotel "Beijing Palace",
Level 11, Esil district,
Syganak Str., 27,
Astana, 010000, Kazakhstan
tel: (7172) 799-271
fax: (7172) 799-272
e-mail: Astana.reception@cpcpipe.ru

CPC-K, East Region

Business center «Seven Stars»,
Satpaeva Str., 34A,
Atyrau,
060011, Kazakhstan
tel: (7122) 76-15-00, 76-15-35, 76-15-99
fax: (7122) 76-15-91
e-mail: Atyrau.reception@cpcpipe.ru

CPC-R, CENTRAL REGION

Kirova/Krasnogo znameni Str., 24A/10,
Astrakhan,
414000, Russia
tel: +7 (8512) 31-14-00, 31-14-99
fax: +7 (8512) 31-14-91
e-mail: Astrakhan.reception@cpcpipe.ru

CPC-R, Republic of Kalmykiya

Suite 608, V.I. Lenina Str., 255A,
Elista, 358000, Russia
Tel: +7(84722) 4-13-89
e-mail: Elista.reception@cpcpipe.ru

CPC-R, West Region

Budennogo Str., 117/2,
Krasnodar,
350000, Russia
tel: +7 (861) 210-98-28, 210-35-46,
210-35-47, 210-35-48, 210-35-49
fax: +7 (861) 210-35-51
e-mail: Krasnodar.Reception@cpcpipe.ru

CPC-R MARINE TERMINAL

Marine terminal, Primorskiy okrug,
Novorossiysk, 353900, Russia
tel: +7 (8617) 64-25-52
fax: +7 (8617) 64-25-51
e-mail: MarineTerminal.reception@cpcpipe.ru

CPC-R, Novorossiysk

Vidova Str., 1A, Novorossiysk,
Krasnodar Region,
353900, Russia
tel: +7 (8617) 61-15-64
fax: +7 (8617) 61-26-90
e-mail: Novorossiysk.reception@cpcpipe.ru

CPC-R, Stavropol Territory

Suite 208, Ryleeva Str., 7,
Stavropol, 355000, Russia
e-mail: Alexander.Ter-Avanesov@cpcpipe.ru