Panorama CPC

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Caspian Pipeline Consortium Corporate Edition

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IN FOCUS:
The Marine Terminal
p. 4–41

Contents:

Nikolay Brunich:

"We apply only the best international practices"

OUR INTERVIEW WITH THE CPC GENERAL DIRECTOR TOOK PLACE JUST BEFORE THE OIL AND GAS INDUSTRY WORKERS' DAY. HOWEVER, THE THINGS HE SAID REFERING TO THE HOLIDAY REMAIN RELEVANT RIGHT THROUGH UNTIL THE COMPLETION OF THE EXPANSION PROJECT. JUDGE FOR YOURSELVES.

– Nikolay Grigoryevich, the Oil and Gas Industry Workers' Day is not just an annual holiday, but also a kind of milestone the industry experts can talk about their business achievements. What are CPC's accomplishments for the day?

– For the CPC team the Oil Workers' Day is a kind of an ending to another "oil" year when we usually sum up the results, report on our progress and give encouragement to those who have distinguished themselves. We have a huge job this year. The first phase of the Expansion Project in Russia is completed. At the Marine Terminal the third SPM has been put into operation, which brought us at the line's endpoint to a production potential fully consistent with CPC's goals of reaching full production capacity level. The pipeline throughput capacity has increased from 32 to 45 mln tons. This success is the result of the cooperative effort of both the Expansion Project team, the regional managers and all the operations and support departments workers. Now, for example, the teams for the new pump stations are already being put together by our HR department – we are planning to put into operation no less than five of those on the territory of the Russian Federation alone.

At PS "Atyrau" – one of the most important sites of the CPC Expansion Project

This event is now history: On April 23 2014, a symbolic push button was pressed to mark the start of operation of the upgraded pump stations ("Astrakhanskaya", "Komsomolskaya", "Kropotkinskaya") and the completion of the first phase of the Expansion Project in the territory of the Russian Federation. The governor of the Astrakhan Region Alexander Zhilkin took part in the grand ceremony.

The Consortium's success was also marked at the shareholders' meeting that took place in May of this year in Geneva. It was stated there that even though at the beginning of 2013 the Expansion Project was running about two years behind schedule, now slippage is no more than a year. And we will not be satisfied with what has already been achieved. For example, according to the construction program approved in Geneva the completion of the last sites is planned for December 2015. As a result, the total delay will be reduced to 6 months (the initial deadline was July 2015). That is a significant progress.

A work meeting at PS "Kropotkinskaya"

– There is no doubt that only the cooperative work of the whole multinational Consortium team made it possible. In your opinion, what are its strong sides and what can be improved?

– CPC is a large international Consortium with a total of 11 shareholders, and in our everyday operations we apply only the best international practices, especially in the fields of industrial, labor and environmental safety. Despite some difficulties at the initial stage, we managed to combine the Russian technologies with the Western ones. That gives us the reason to believe that the CPC pipeline system is going to continue to function absolutely smoothly and flawlessly.

Talking about the Expansion Project I have to note that we have significantly improved its structure, updated the management system and enhanced the efficiency of the decision making process. There are head offices and task groups working at construction sites which promptly solve all the current issues with the representatives of authorship supervision, equipment suppliers and operations services experts.

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Another important innovation is CPC estimation group that was created on the auditors' recommendations. Now all the questions referring to project estimates and various purchases will be solved for the company's maximum benefit. In the past the offer price was actually determined by contractors.

That is a really huge step towards the optimization of the financial policy conducted by CPC, and consequently, towards the creation of favorable conditions for increase in profits, speediest repayment of debts and paying dividends to our shareholders.

We will also keep on adjusting the company's policy in accordance with the legal requirements of the Russian Federation and the Republic

of Kazakhstan. I believe it necessary to act with maximum efficiency in the interests of both the shareholders and the states where our sites are situated.

– The expansion of CPC is a large-scale project. Is the financing being provided on schedule?

– CPC is a unique project in many ways. Not only does it not have current debts to the General contractor; on the contrary, it is we who are awaiting the funds spend by them to be able to speed up the construction of the facilities. The fact that CPC is not using external borrowings is also unique – the Expansion Project is financed purely from our own circulating assets. We have external financing contract to cover revenue non-receipt risk, but we have never used it and the financial model shows that we never will. The Expansion Project budget is approved by the shareholders and it comes out at 5,4 bln US dollars, 3 bln of which has already been spent. The 2014 spend will be 900 mln US dollars.

"The CPC expansion is a unique project in many ways. Not only does it not have current debts to the General contractor. On the contrary, it is we who are awaiting the application of funds from them to be able to speed up the construction of the facilities"

– By increasing the crude shipment volumes, CPC is becoming more and more noticeable at the world map of the pipeline systems of crude hydrocarbons transportation. As the head of the Consortium, do you feel a growing interest in it at the international level?

– Many oil companies, especially those situated along our pipeline, are closely watching CPC's development and the increase in its pipeline throughput capacity. It is no secret that for Kazakh oil exports it is two to three times more economical to use the routes offered by the Consortium rather than any others. Before the start of the Expansion Project we used to transfer about 30 mln tons of oil per year, but once it is finished we will be able to increase the system's throughput capacity up to 70 mln tons. However at present we have no incremental capacities that we could possibly distribute by tendering among the non-shareholders in accordance with the constituent documents.

Even after all the Expansion Project facilities are put into operation, PS "Kropotkinskaya" will remain the largest Consortium station in the Russian Federation

With the Kashagan field in operation, our pipeline will be filled. The full load will allow us to quickly clear debts, return loans to shareholders and start conducting the dividend policy for the shareholders in Russia and Kazakhstan.

– Is there anything you would like to wish to CPC staff for Oil Workers' Day?

– I wish them splendid health! I wish them to be able to come to work in a good mood, enjoy what they are doing and communication with their colleagues. I also wish them to have respectable salaries as it is the only profit source for our employees. We took a serious step in that direction in 2014. I hope that our shareholders will keep on supporting us in that respect. ■

Interviewed by Pavel Kretov

The Marine Terminal: the view from the captain's deck house

While this issue was in production

On September 3, CPC General Director Nikolay Brunich inspected the progress of construction at the facilities being erected within the framework of the Marine Terminal's Tank Farm Expansion Project. At a working meeting with the top managers of the managing company and contractors, he noted the considerable progress in the pace of construction achieved over the two months that had passed since his previous inspection trip. The effective performance of the recently established Working Group for operational management of the Tank Farm construction was acclaimed as the catalyst of such positive developments.

Vladimir Sinyagovsky:
"One must not say 'no' to progress"

NOVOROSSIYSK IS ONE OF THE MOST IMPORTANT TRANSFER POINTS FOR CRUDE CARBOHYDRONS AND OIL PRODUCTS, AND THE CPC MARINE TERMINAL IS AN INTEGRAL PART OF IT. "THE CONSORTIUM IS AN EXAMPLE OF HIGH SOCIAL RESPONSIBILITY", – VLADIMIR SINYAGOVSKY, THE HEAD OF THE NOVOROSSIYSK HERO-CITY WAS PLEASED TO SAY IN HIS "CPC PANORAMA" INTERVIEW.

The monument to the founding fathers of the city of Novorossiysk

– Vladimir Ilych, how significant for the city is the dock activity of oil transfer?

– Most of all, it's the "visiting card" of Novorossiysk. 56% of the city budget and the consolidated budget comes from such transportation that includes the sea transfer of oil, reduced crudes, etc. CPC alone loads tankers with more than 30 mln tons, plus other participants transfer about 55-60 mln tons, so altogether it comes up to 100 mln tons a year!

Whether it is Sheskharis or the CPC Marine Terminal, the technical performance level of the oil facilities that determines the high ecological standards of their work is very impressive. I would like to particularly mention the safest way of transferring oil with the help of three single point moorings, organized by the Consortium. CPC is a highly productive, effective and well-organized company.

No wonder that so many people would like to work there, and those who do are justifiably proud of their company.

– The formation and development of the CPC pipeline system took place right before your eyes. What were the relationships between the city administration and the company management during all these years?

– We are proud of the relations we have built with the Consortium as it took some effort. I made my acquaintance with CPC 12 years ago when I became the city mayor. The attitude of local people towards it was highly negative. People even brought me oil-contaminated pebbles which, as I later found out, CPC was not responsible for. It was clear to me that it was an organized campaign against the oil workers and some resourceful gentlemen were trying to turn it into a kind of "gold mine".

There was a serious oppositional movement, organized by specially trained people, during the time when we were negotiating with CPC over the construction issues of the system's second extension. Yet the public hearings were conducted in full accordance with the law, all the construction permits were processed, so now construction is successfully progressing within the frames of the CPC Expansion Project.

– What benefits do the local people get from the presence of the Consortium?

– The city has a number of urgent issues such as municipal improvement, roads, housing and utilities ... It takes serious financial resources to attend to all of them. For example, we need 1,5 bln rub for resettlement of people from old housing stock. And then there are the problems of medicine, education... Over half of the city budget is spent on solving social issues. It's good to have companies with a high level of social responsibility in our municipal district, and CPC is a good example.

Everybody here knows the company. In the city we have trolley-buses, buses and ambulances bearing the CPC logo. A short time ago the Consortium presented Novorossiysk with a new batch of public buses. At the expense of CPC we purchased expensive medical equipment that most medical facilities can only dream of.

Have you already seen the construction site of the new kindergarten for 160 kids in the Glebovskoye rural district? I also took a look at it yesterday. It is a pretty impressive facility, and by putting it in into operation we can make progress in solving one more burning issue – providing kindergarten places for all those who need them. I will give you some happy statistical data: we have 1,900 newborn children this year, 500 infants more than during the same period last year. And thank God!..

CPC is a highly productive, effective and well-organized company. No wonder that so many people would like to work there, and those who do are justifiably proud of their company

Today Novorossiysk is among the top-rated cities in terms of salary levels due to all-the-year-round employment of the population, in contrast with Anapa or Gelendzhik where people are only temporarily employed during the vacation season when there is an influx of tourists. Our unemployment rate is only 0,2% since we have manufacturing in operation, public transport is working and the dock operations continue. We enjoy these favorable conditions partly thanks to the smoothly running Consortium which is planning to double its oil transfer volumes in the nearest future, and »

Novorossiysk – a hero-city, a port, the southern gates of Russia It stands on the crossing of transportation corridors that connect the country with the Mediterranean, the Middle East, Africa, Asia, North and South America

that means more working places and extra tax revenues. There is one more obvious advantage: the best local builders are engaged as subcontractors at the Expansion Project sites, and they have a chance to become familiar with the international practices and experiences accumulated by the Company.

That is our way to join efforts for the purpose of solving citizens' social problems.

– Novorossiysk is also a resort zone which means the very highest ecological standards must be observed in the region. How do the CPC facilities fit into the city's ecosystem?

– I am familiar with the strict environmental safety measures observed by the Consortium because I myself visit the Marine Terminal from time to time. I can confirm the absence of any enterprise activity-related smells, which is highly important for resort areas. There hasn't been a single emergency event for the whole period of CPC's existence thanks to the modern technologies used. That is why today we have clean sea and land where the tourist resort business can be developed to a top level. Now it all depends on the investors who could put serious money into this.

– Last night we observed families with children bathing and relaxing right next to the CPC terminal...

Handing over medical equipment to Novorossiysk municipal hospital No. 1

– The water there is crystal clear, we have juniper growing along the shore which as you know is an indicator of air purity. It is not only the people who are not bothered by the terminal – there are lots of dolphins in the tanker port aquatorium, and their presence means the water environment is doing well. When we show it to visiting foreign delegations, it takes them by surprise.

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People can get very critical sometimes when something new is being built – like oil or fuel oil terminals. I don't think it is right. I believe that the sea exists to perform various functions like trade and transfer. One should understand that everything is going to be safe when modern technologies are applied, don't you agree? When you say "no" to progress – it's a dead-end path.

– How do you see the prospects for future city relations with the pipeline Consortium?

– We work directly with CPC, the regional authorities are not involved – and we highly value this relationship. What we have is a separate cooperation program. We are very optimistic about the existing format of relations. CPC General Director Nikolay Brunich is an experienced manager and a very sociable person. He immediately resolves any issue, and I don't have to leave the city to pester any offices in Moscow.

We also have contact with CPC representatives based in Novorossiysk. As of today I have no questions for the Company. We are getting ready for the autumn negotiation session that will determine the perspectives for cooperation between the city and the Consortium for the next year. ■

By Ekaterina Suvorova

A Big-time Oil Port

The Marine Terminal is the end point of the Tengiz-Novorossiysk oil pipeline, which is more than 1,500 km in length. The first tanker was loaded there on October 13 2001. By September 1 2014 around 365.75 mln tons of oil had been shipped to the CPC terminal in Novorossiysk and loaded into almost 3,420 tankers. According to data gathered by the port experts the most frequent tanker destinations were Italy, France and the Netherlands. The CPC terminal can receive tankers with a maximum deadweight of 300,000 tons.

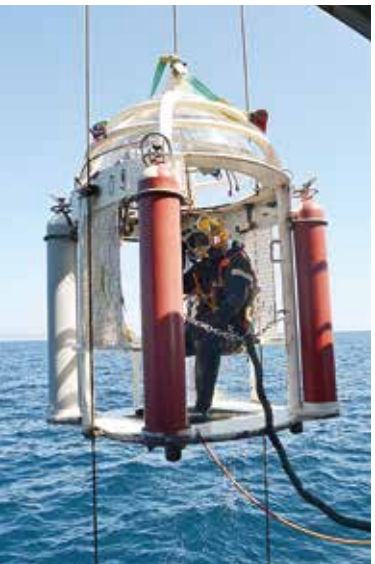












Alexander Krichun:

"The entire system's rhythm of work depends on our unique specialists"

NOVOROSSIYSK MARINE TERMINAL IS THE END POINT OF THE 1,500-KM-LONG CPC PIPELINE SYSTEM. IT IS THE POINT WHERE THE CASPIAN OIL ENDS ITS RUN THROUGH THE PIPELINE AND WHERE THE TREMENDOUS WORK OF THE MULTINATIONAL TEAM OF PIPELINERS IS COMPLETED. REGIONAL MANAGER ALEXANDER KRICHUN TOLD "CPC PANORAMA" HOW IT FEELS TO BE IN CHARGE OF THIS "FRONTIER".

– Alexander, without doubt the Marine Terminal team feels special responsibility for the final result of the whole effort.

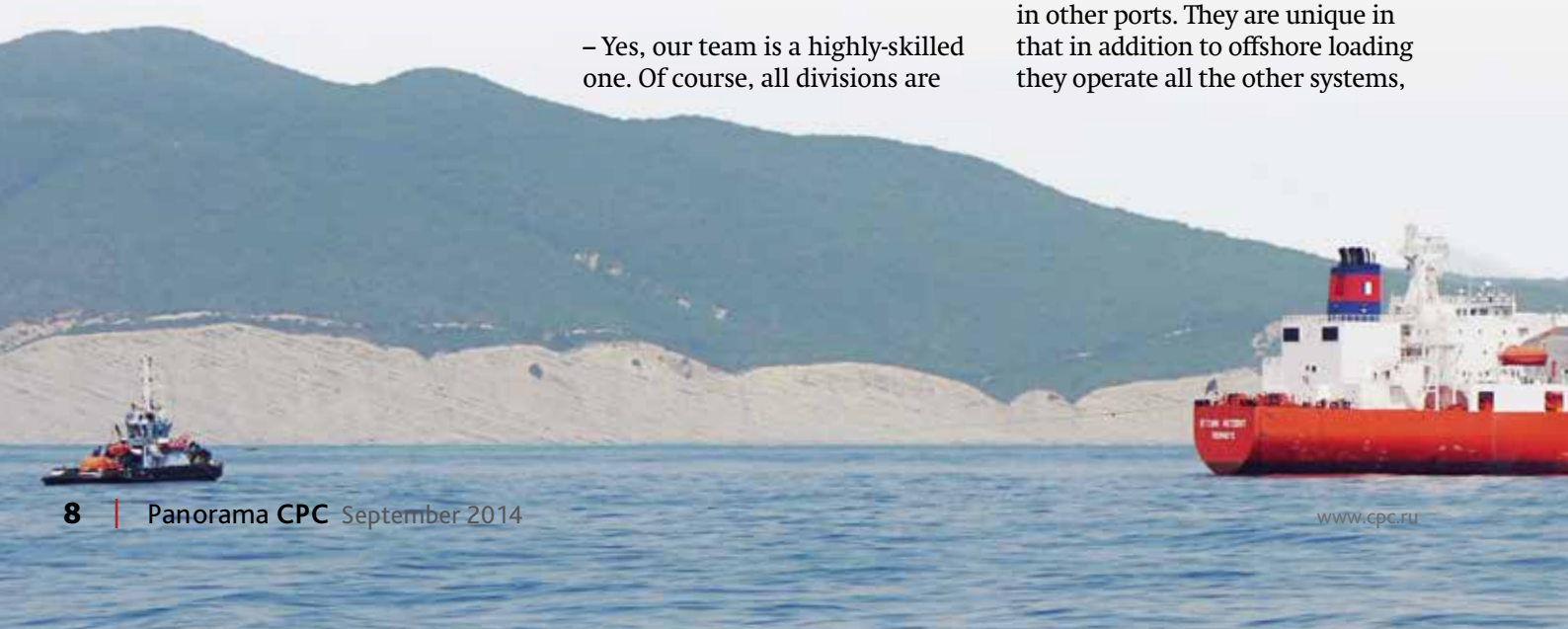
– Of course. The performance of the whole pipeline system, which begins in Kazakhstan, depends on the quality and coordination of our work. If we fail to perform offloading on schedule, the whole pipeline will stop. Fortunately, the Marine Terminal team has never allowed any such delays to occur.

The rhythm of work of the Marine Terminal has become even more important in connection with the Expansion Project and increased oil transportation volumes through the pipeline system. After all, the oil transportation rate through the pipeline is increasing every month and currently is more than 6,000 m^3/h. The existing four VFRTs-100000 tanks are only capable of giving us a safety margin of 24 hours; therefore, we are waiting impatiently for the new tanks to be put into operation, which will make it possible for us to put oil into storage during winter storms. As things stand today, all the oil coming to us through the pipeline is immediately loaded onto tankers. The work is intense and the responsibility is high. The Operations Department's workload is particularly high.

– Despite all the difficulties you have mentioned, the team is coping?

– Yes, our team is a highly-skilled one. Of course, all divisions are equally important and each contributes to the final result, but I would like to specially note the professionalism of the onshore service team, its engineers, operators and mechanics, and the marine department's team, which possesses huge experience of cargo handling operations and oil transfer to the maritime transport.

All our onshore employees, who are in charge of managing the process, have higher educations. We do serious HR work, including strict selection, education and training, in order to ensure the high reliability of the terminal's performance in the future. Look how it is - our specialists are unique - you will not find anyone like them in other ports. They are unique in that in addition to offshore loading they operate all the other systems,



without which the loading process could not be performed.

– What are the priority tasks facing the Marine Terminal's team?

– In the near future, it is, of course, the completion of the Expansion Project's Phase 1. Operations services (offshore and onshore) and the Department of Technology (IT, communications, SCADA) – all work in support of the Expansion Project. After its completion, we are obliged to immediately take on new facilities and start their operation without losing a single minute. Incidentally, the Expansion Project's first facility, SPM-3, was put into operation at the Marine Terminal in February 2014. Soon the facilities of the tank farm will be ready. In November, we will be accepting for operation Tank No. 8, and in March 2015 we are scheduled to take on all tanks included in the Phase 1 scope of work.

– What preparatory work, organizational and HR, is under way at the terminal in view of the scheduled doubling of the pipeline system's throughput capacity?

– All the preparations have already been completed. This is nothing out of the ordinary, but something we have been preparing for well in advance. The work aimed at strengthening our HR potential was started back in March 2011. This year we hired new people for certain key positions in the Operations Department. By the end of this year, one more shift will be formed and will start working, which will allow us to divide the roles of servicing the tank farm and the shore facilities. As things stand, the tank farm and the onshore facilities are serviced by one and the same team, which is not very convenient. In addition, the staff of our auxiliary departments has been increased by 1-2 people each. The IT Department has received noticeable reinforcements, and currently its specialists are servicing not only the Marine Terminal's facilities, but also those of the pipeline, up to the Kazakh border.

Now that the number of employees has increased, in order to ensure optimal accommodation of CPC personnel at the Marine Terminal, the Consortium's leadership has decided that a new, third, office building needs to be constructed. Design is currently under way. We expect the construction of a new office building to be completed by the end of 2016.

All of Alexander Krichun's life has been connected with the sea. After graduating in 1978 from the Odessa Higher Maritime Engineering School, he served on various vessels belonging to the Novorossiysk Shipping Company. In 1986, he obtained his Captain's Diploma. Alexander Krichun has been to many ports around the world. "If I put stickers on a map of the world," he smiles, "it would look really dotted." In the 1990s, after the fall of the Iron Curtain, he became the first Russian captain to serve on the bridge of a foreign tanker, sailing under the Norwegian flag. He commanded high-tonnage vessels, up to 340,000 DWT. Alexander Krichun has been with the CPC Marine Terminal from the very first day of its operation. On October 13 2001, he took part in the loading of the first tanker as a mooring master

– The terminal is located on the coast, with the city of Novorossiysk and numerous resort areas in the neighborhood. Do you feel any increased interest in the oil port and its work from the general public or environmental organizations?

– As you must know, the Company devotes major attention to industrial and environmental safety issues. Thanks to the application of the most advanced technologies, not a single drop of oil has ever leaked into the environment during the performance of loading operations at the Marine Terminal or during

the transportation of oil along the pipeline's entire route. Nevertheless, the oversight agencies are permanently on duty, checking our activities and our compliance with the relevant requirements. Incidentally, three oversight agencies – the Federal Service for Environment, Technology and Nuclear Oversight (Rostekhnadzor), the Federal Service for the Oversight of Consumer Protection and Welfare (Rospotrebnadzor) and the Russian Federal Fisheries Agency (Rosrybolovstvo) – are currently working together at the terminal, performing their scheduled inspections. Approximately 70% of the programs of such inspections are related to environmental control issues.

– What is the attitude of the local residents toward the terminal and its activities?

– I can say with confidence that we have won the confidence of the locals through the accident-free operation of the Marine Terminal and our purposeful public awareness campaign. They understand that as far as environmental security is concerned the Consortium will never agree to any compromise.

At the public hearings, which took place in March this year, we familiarized the locals with our new, improved, oil spill response plan. It was a very lively discussion, lots of questions were asked, and the result was an even higher confidence among the people in the safety of having CPC facilities in their close neighborhood.

It is indicative that the market price of land in the neighborhood of the Marine Terminal is among the highest in the region. Demand for this land is very high, which would hardly be possible if the locals considered the area to be unsafe or ecologically unstable. ■

Interviewed by Pavel Kretov

Cosmic parallels of the Main Operations Control Center

OIL TANKER LOADING IS PERHAPS ONE OF THE MOST IMPORTANT OPERATIONS PERFORMED BY CPC, WHILE THE RHYTHM OF THE MARINE TERMINAL OPERATIONS TO A LARGE EXTENT DEPENDS ON THE COORDINATED WORK OF THE CONTROLLERS. IT IS AT THE NOVOROSSIYSK MARINE TERMINAL WHERE THE MAIN OPERATIONS CONTROL CENTER OF THE WHOLE CPC PIPELINE SYSTEM IS LOCATED.

SANCTA SANCTORUM

Access to this "Holy of Holies" is granted only to a limited number of employees with special passes. This is the place from where all pumps, shutoff valves and other process equipment along the entire pipeline length, from Kazakhstan to the Marine Terminal, is managed.

The Main Operations Control Center is a spacious premises with two consoles, exactly like those in the NASA Houston Space Mission Control Center. One console is for the controller in charge of the pipeline's performance, from Tengiz to Novorossiysk. The second console is for his colleague who is in charge of the tank farm operation and tanker loading.

Their responsibility is on a level with NASA employees. Judge for yourself: the pipeline system's throughput capacity is currently in excess of 6,000 m^3/h or more than 100 rail car loads. Importantly, these amounts not only need to be transported through the 1,500 km long pipeline, but also need to be loaded onto tankers promptly and without delays.

– In essence, the work of the whole CPC team, its main and auxiliary divisions, is targeted precisely at helping our two controllers perform their work properly, and create all necessary conditions for them, – lead controller of the Main Operations Control Center Alexander Nosov commented. – Therefore, nobody has the right to interfere in their work or hurry them up. If a controller decides that the performance of an operation contradicts the interests of safety, he will not allow such operation to

At the Main Control Center at the Marine Terminal

From the tank farm, oil flows by gravity to the shore facilities

Alexander Nosov: "The controller controls everything!"

be performed and his decision will be final and incontestable.

A THIRD ONE IS NEVER SUPERFLUOUS

The control room is designed perfectly in all respects. Even the fact that the controllers can hear each other's telephone and radio conversations is no drawback, but an essential feature. The controller in charge of tanker loading must be well informed of the pipeline's performance, while it is no less important for his colleague, who is in charge of the pipeline's performance, to be permanently aware of the situation at the Marine Terminal.

Data on the monitors of the controllers are updated every second, regardless of the distance between the controlled facility and the control center. Such promptness is provided with the help of the SCADA automated control system. SCADA gathers data from nearly 80,000 points along the pipeline's route, its pump stations and the Marine Terminal. The data is transmitted through the CPC-owned fiber-optic communication system, with a length that is equal to one-third of the equator.

In the near future, the Main Operations Control Center will receive a third console: two controllers will be assigned to the pipeline's performance control. One controller will be in charge of the pipeline's section from Tengiz to PS "Komsomolskaya", and the second controller will be in charge of the remaining part of the pipeline. This is being done in view of the projected launch of 10 new oil pump stations.

The controllers work 12-hour shifts for four consecutive days and then they have four days off. An employee who returns to his duties from a lengthy vacation will never be allowed to manage the pipeline right away. His first day at work will be devoted to reading the new executive orders and regulations issued during his absence and working with a simulation software modeling pipeline management and hydraulic processes. Only after having proven his professional skills will he be admitted to actual work.

STRICT SELECTION

In terms of its strictness, selection for the controller positions can be compared to the selection of fighter aircraft pilots. Much attention is given to professional skills and experience, but no less attention is given to stress resistance.

– The power units of our pump stations are nearly as powerful as aircraft engines. Each pump station has three such engines - Alexander Nosov remarked.

Alexander Nosov is an oilman with 30 years of experience of work in the industry. He has worked in all spheres of the fuel and energy complex – from geological exploration and production to hydrocarbon processing and transportation. He has more than one higher education diploma - but this is common for the staff of the CPC controller service where each employee has at least two university diplomas.

It is interesting to recall that when the construction of the CPC pipeline system was nearing completion, all processes (hydraulic tests, water replacement and launch of oil transmission) were managed from Moscow. It was only when the linefill oil passed PS "Komsomolskaya" that the controllers moved to the Main Operations Control Center at the Marine Terminal. Remembering such hard work and unforgettable dates, they observe the CPC Controllers' Day every year on June 1.

– This fall will not be an easy time for us. We will have to perform the commissioning of the pump stations built as part of the Expansion Project's Phase I. We are getting ready to work hard - and for lengthy business trips to the construction sites, – Alexander Nosov completes his story. ■

By Pavel Kretov

Celebrating "Day of the Seafarer"

IN LATE JUNE, ON THE INTERNATIONAL "DAY OF THE SEAFARER", LARGE-SCALE COMPREHENSIVE DRILLS FOCUSED ON OIL SPILL CLEANUP WERE HELD AT THE CPC MARINE TERMINAL.

NOT A SINGLE DROP OF OIL SPILLED!

The large-scale drills in the harbor area of the port of Novorossiysk were watched by CPC General Director Nikolay Brunich, representatives of the CPC shareholder companies (Transneft, KazMunaiGaz, Chevron, ExxonMobil, Eni and others), and representatives of the supervisory and oversight agencies – the Federal Service for Supervision of Transport (Rostransnadzor), Federal Service for Environment, Technology and Nuclear Oversight (Rostekhnadzor), Federal Supervisory Natural Resources Management Service (Rosprirodnadzor), and the Transport Prosecutor's Office, Marine Superintendent's Service, Civil Defense Administration of Novorossiysk, RF EMERCOM Main Division for the Krasnodar Region and RF EMERCOM Southern Regional Center.

– CPC has gathered together all the best practices of Russian and foreign companies specializing in pipeline transport. Thanks to the use of the very latest methods, painstaking HR efforts and regular drills, including focused emergency response, the CPC pipeline system has become among the most reliable of its kind in the world, – CPC General Director Nikolay Brunich commented.

– It is common knowledge that our company devotes high attention to labor safety and health, industrial and environmental security. It is a fact that speaks for itself: not a single drop of oil has been spilled, onto earth or into water, since the start of operations of the CPC facilities. The comprehensive drills graphically demonstrated how the CPC management and specialists and their contractors succeed in achieving such impressive results. The drill scenario, which was developed by Marine Terminal specialists with the aim of putting to comprehensive test all available equipment and human resources, envisioned the least likely accident, as well as the one most difficult to correct –

CPC General Director Nikolay Brunich (right) and Chief Operations Manager Roman Vasilyev

NIKOLAY PLATONOV, Deputy Director Transneft Foreign Economic Relations Department, commented:

– We share the positive verdict on the event. It is notable that Consortium personnel are permanently improving their skills, developing and adopting the best international practices. Also, I would like to note the performance of the Operation Management Headquarters, although this was nothing new for Transneft: it is well known that the company employs true professionals.

"Transneft" Foreign Economic Relations Department Deputy Director Nikolay Platonov (center) attentively watching video broadcast from the coastal booms and oil-collection equipment deployment site.

Deputy Regional Manager for Marine Operations Igor Florovsky (center) and representatives of the CPC shareholder companies

a guillotine breakage of the subsea pipeline during tanker loading at SPM. The drills involved around 300 people from the Marine Terminal supported by 26 vessels plus a helicopter for surveillance and evaluation of the current situation in the harbor area.

TWO FLEETS

It took the Consortium's specialist contractors less than two hours to deploy booms around the imaginary contamination patch to a total length of 1,800 m. The operation was performed by two marine forces: the "Lamnalco" fleet moved in directly from the auxiliary vessels harbor area, and 45 minutes later vessels of the "Transneft-Service" fleet arrived at the site from Novorossiysk. The two fleets arranged into eight mobile formations for collecting oil from the water surface.

ExxonMobil emergency response advisor for Europe, Africa and the Middle East RUPERT BRAVERY commented:

– We have seen for ourselves that the "Lamnalco" and "Transneft-Service" fleets are capable of bringing all the necessary means and forces to bear in such situations. However, I would propose for the next exercises to include elements of surprise to see how the terminal's personnel is capable of accident mitigation in changing conditions.

The onshore work went just as well in terms of coordination. The contractors promptly deployed 400 m of coastal booms and made 4,700 m more ready for immediate deployment. They delivered a sufficient number of containers for collecting oil-containing mixture and polluted soil and oil collecting units to a total capacity of 900 m^3/h. A multipurpose 9,500 m^3 tank was prepared for receiving oil-containing mixture.

Operation Management Headquarters provided general coordination. In just a few minutes the terminal was provisionally placed on emergency situation regime. Communication was established, the situation re-evaluated, the supervisory authorities and local residents notified, arrangements made for the delivery of an environmental analysis lab, and the contractors specializing in the removal and disposal of contaminated wastes were contacted. ▸▸

The coastline is reliably protected

Operation Management Headquarters explained each instruction and the information coming from the "accident" site to the representatives of the supervisory authorities and event guests. For better visibility, a large monitor was installed displaying data of the Automated Identification System (AIS), which showed the movements of vessels in the harbor area in real-time mode. Large monitors in the Operation Management Headquarters displayed video broadcast from the site where coastal booms and oil collection equipment were being deployed.

THE VERDICT IS POSITIVE!

The drills received a positive appraisal from the observers and representatives of the supervisory authorities. In their concluding statement they noted that all goals and objectives were successfully achieved: the mock oil spill was promptly contained and cleaned up and the coastal strip was reliably protected.

KATE FRASER-SMITH, Oil Spill Response specialist from Oil Spill Response Ltd. commented:

– We liked very much how the drills were organized. All necessary information was available at the Operation Management Headquarters. The oil spill response plan developer courteously answered our questions, and we were provided with all necessary materials. We were greatly impressed by the excellent communication and coordination between the vessels: all vessels moved out of the harbor when appropriate, occupied their designated positions and remained strictly in place until the end of the drills.

– The drills checked the efficiency of organization and management of the regular emergency response means, involved practical training in the deployment of emergency response equipment, maneuvers of the oil-collection formations and interacting technical means, – CPC-R Marine Terminal Regional Manager Alexander Krichun commented, summing up the drills and their results.– Terminal specialists and representatives of the supervisory authorities concluded that the facility's available regular means and forces of emergency response were sufficient and compliant with the requirements stipulated by the Oil Spill Response Plan. During the drill, the coastline protection team successfully perfected their skills in adverse weather conditions and sea swell over 2 m, and practiced other activities. ■

By Pavel Kretov

All personnel of the CPC emergency response units are certified rescue workers

Representatives of the supervisory authorities watched the progress of the large-scale drills

Guests of the event were provided with all necessary materials

Yuri Belov:

"We all are going to be proud of what we have created"

THE ONSHORE MARINE TERMINAL DEPUTY REGIONAL MANAGER YURI BELOV IS A RELATIVELY NEW PERSON AT THE MARINE TERMINAL– HE HAS BEEN WORKING THERE SINCE THIS MARCH, SO ALL HIS IMPRESSIONS OF THIS ENTERPRISE ARE STILL FRESH.

– You can feel that this team is the result of the careful selection process that has been ongoing during all the years of CPC's existence, – Yuri Nikolaievich remarks. – I was pleasantly surprised to find out that all the operating staff is university-educated. They are all intelligent and capable people, and so we never face any implementation problems typical of some Russian companies when executives not only give directions but also have to make sure they are executed.

– Did anything else take you by surprise?

– The fact that the operation service is not directly related to the loading itself. All we do is service the equipment that is operated automatically by the Operations Control Center staff, they give commands by pressing a button. We know from CPC's experience that it is not enough to build facilities, establish an automation principle and invest money in this automation. To make it all run smoothly and flawlessly 24 hours a day is really invaluable, and this problem has been definitely solved here. The people at the monitors are daily and effortlessly running the business and operating the equipment over the vast territory. I have never seen such a closed production cycle before, and I do not mean only in Russia. Before I joined the Consortium I worked in Serbia and saw their terminal, I also used to work in Hungary, Croatia, Italy... I can safely say that there are no terminals with arrangements and an automation level equal to that of CPC. No doubt credit goes to the Consortium's Western managers who introduced the most advanced international technologies into the facility construction. Everything was built and worked out without spilling a single drop of oil.

The local sea is so pure and blue largely thanks to the accurate work of the automatic systems. Of course one should not forget about the human factor – people need time to react, and unfortunately in the oil business such situations may develop with catastrophic speed.

It's the individual who makes most decisions, but automated equipment gives him time to size up the situation and make the right one

It's the individual who makes most decisions, but automated equipment gives him time to size up the situation and make the right one. In CPC the automated systems really work and help people with taking the right decisions.

The CPC team has a lot to be proud of, and there are lots of things to learn from them, so I am learning.

– Alongside the Marine Terminal operations there are the Expansion Project works. That must make the induction period a lot more difficult for you?

– It's a really challenging time, when I have to become familiar with the operational details of a large company and at the same time be very hands-on with all the construction details.

It makes you nervous when there is ongoing construction at an operating facility, when you see the machines driving into the Tank Farm – all those bulldozers and pipe layers that can cause serious damage with one careless move.

Some inconsistencies rooted in the facilities' design come up. It's no big secret that we may have wells right in the middle of a road, and some diversions only exist on paper plans.

Brownfield construction is progressing with special precautions

We are trying to make provision for everything possible to ensure the security of people and equipment, and that is a difficult thing to do. What really helps is the professionalism of all the staff, the technical and operating personnel. Together, we will get through it all.

– Is it possible to predict any complications so as to prepare for them?

– The Tank Farm will be set to work during the autumn and winter period which will definitely result in some problems. Rains, water and drops in temperature – all of these are extra loads for the operation services. We hope that we will be able to successfully get over any difficulty, in cooperation with the Expansion Project specialists and building contractors.

– Does the fact that the expansion is taking place in "waves", one phase after another, make it easier or more difficult?

– It definitely makes it more difficult. What we have is a situation when operation is gradually "pressing on" the construction process. Some facilities can be brought into operation only in one piece. For example, a completed electric substation with the voltage on may become dangerous – there are construction works in full swing all around it. The worst enemy is such situations is the recurring nature of human habit. A construction worker may not always know the things that can't be done here once it is already an operating facility. He has to completely change his behavior – but he is used to being the boss here and to acting accordingly. That is when the problems start. One can easily reprogram a machine or issue an order that turns a green zone into a red one. But the hardest part is to make the performers, the builders, change themselves.

That is why the zone of responsibility becomes a trouble spot when control changes hands. And only the professionalism of our staff stops many things from happening. I even sent a corresponding inquiry to PMC, which found its response there: the Chevron specialists working at construction sites started paying more attention to such zones, and currently we have managed to achieve real professional cooperation. The first stages of the Tank Farm operational zones expansion went rather smoothly.

– How do you divide your time between general operations and the Expansion Project?

– I have to dedicate about 80% of my time to the Expansion Project. At the time the best staff were assigned to its implementation, the intention being that the operation services would receive a ready facility as a result. But life sets its own rules. It is difficult for Expansion Project specialists, with all the tasks they are facing at any moment, to feel the operational rhythm. Besides, some things have to be decided by those in control of the facility, which means the operating staff.

In an ideal world, we would receive a ready-to-use facility from the builders. But in reality we will not get the proper quality if we do not participate in the process.

Taking advantage of this opportunity, I would like to thank all my colleagues from EP, PMC, Chevron and "Koksokhimmontazh" for their cooperation, professionalism and commitment. I know I can be harsh sometimes and I apologize for that. Everything depends on the tasks set before us.

– Do you already see the light at the end of the tunnel?

– I do – and it's a rather bright one! But I think the conclusion of the construction works that everybody is so looking forward to will come right out of the blue, as it usually does – when the ugly duckling turns into a swan. We all are going to be proud of what we have created. ■

By Ekaterina Suvorova

Mark Kevin Nance: "Never compromise on safety principles"

CPC'S EXPANSION INVOLVES LARGE-SCALE CONSTRUCTION OF THE "TENGIZ-NOVOROSSIYSK" OIL PIPELINE SYSTEM, WHICH IS BEING UNDERTAKEN BY A LARGE MULTINATIONAL TEAM. BUT MOST OFTEN IT'S THE ENGLISH LANGUAGE THAT CAN BE HEARD AT THE MARINE TERMINAL, WHERE CHEVRON IS THE PROJECT MANAGEMENT CONTRACTOR. CHEVRON NEFTEGAZ, INC. BRANCH DIRECTOR MARK KEVIN NANCE TOLD "CPC PANORAMA" ABOUT THE SITUATION ON SITE, AND THE COOPERATION OF SPECIALISTS FROM DIFFERENT COUNTRIES AND THEIR EXCHANGE OF SHARED EXPERIENCES.

– Mr. Nance, the CPC Expansion Project has reached a stage where you can look back and see some of the results of the work. What experiences have been new for you in this project?

– This project is unique for Chevron, it's unlike any other project that we've done before. It will be remembered for the extensive rocky earth works, construction of advanced marine systems like SPM-3, and installation of six major 100 000 m^3 tanks. There are a number of contractor organizations with different work management styles taking part in the project, but nevertheless we have managed not to compromise our fundamental principles. Safe execution of works is our greatest value. Efficient accomplishment of the work is natural when executed safely. The results obtained show that we are applying the best possible project management practices in these challenging conditions.

– How did Chevron Neftegaz, Inc. form its team for implementing the project?

– We put considerable effort into the organization model development for our future work in Russia. The planning of the work was started in a large Chevron center of expertise in Houston a year before team mobilization began in Novorossiysk and Moscow. After we arrived in Novorossiysk, we proceeded with building up the team. First of all we invited those specialists who had proved themselves during the initial CPC facilities construction. We also had high hopes for the experts who had carried out large oil

and gas projects in Sakhalin. In addition, we found many talented specialists in Novorossiysk and the Krasnodar Region.

– How did relationships develop between the project managing company, Chevron Neftegaz, Inc., and the contractors? What difficulties did your team have to overcome in the course of such collaborative work in this multinational environment?

– It's true that ensuring productive cooperation required a lot of effort at the initial stage. In the course of multiple meetings with the contractors we managed to work out procedures to regulate the operation during the project's realization and risk management. That is a crucial moment; as we all know, obligations taken on voluntarily are executed with much more enthusiasm than those given in the form of orders. By using this approach we let all participants feel they were part of the team, and that their opinion mattered to us.

– Chevron Neftegaz, Inc. is participating in all the onshore and offshore Expansion Project work at the Marine Terminal. How important was the commissioning of SPM-3 for the construction team?

– It was the first large important facility commissioned as part of the CPC Expansion Project. It has been some years since any new facilities were connected to operations in the Consortium pipeline system. During the SPM-3 commissioning process we worked together closely with the representatives of various organizations, including the CPC Operation Department and other contractors, and worked out the plan to be used in putting the facility into operation. That scheme is now being used within CPC for commissioning other Expansion Project facilities. I have to note that SPM-3 is one of the most advanced marine facilities of its kind in the world. The use of the latest technologies in the system resulted in some difficulties during check-out and start-up. But now when the facility is operating at full capacity we can confidently state that CPC has got an efficient buoy that will operate as required for the company's benefit.

– How about the progress of construction work in respect of tanks No. 8, 4 and 6?

– Tanks Nos. 8, 4 and 6 part of the Expansion Project Phase 1. The next three tanks (No. 7, 9 and 10) are part of the Phase 3 effort. Speaking of tank installation, we should remember that simultaneously with the erection of tanks auxiliary facilities are constructed at the site (such as power supply system, control system, fire-extinguishing system, and others), without which tank operation is impossible. The Phase 1 construction works are close to completion, which brings us to the test stage, before the oil is dispatched. Our main efforts are now focused on the Phase 1 tanks, tank No. 8 in particular. Once it starts working, we will be able to help the Marine Terminal to run faultlessly throughout the forthcoming winter storm season.

– You requested 96 (72+24) hours for future pipeline shut down in October. That's a lengthy period for a functioning pipeline. What's planned for that time?

– We have a lot of work to do. Our plans include the tie-in of a 56-inch (1,422 mm) offloading manifold's shutoff unit at the Marine Terminal's tank farm. The work will require draining off the product from the offloading manifold, cutting off a 15 m long section of the pipe, cleaning the pipeline, degassing and sealing. Since CPC can't suspend the operation of the "Tengiz-Novorossiysk" pipeline system for the entire 96 hours (which would cause stoppage of oil production), we proposed to perform the work in two stages. Stage one will be completed over 72 hours while the pipeline's operation is suspended, and the remaining work will be performed during 24 hours when the pipeline is operated in a reduced capacity mode. During the latter 24 hours, oil will be transferred through the hydraulic washing-out line at the rate of 3,000 m^3 per hour. The tanks of PS "Kropotkinskaya" will be used for storing the rest of the feedstock. ■

Interviewed by Julia Starodubets

Mark Kevin Nance was born in the state of New Mexico, not far from Texas, which is famous for its oil industry. His father worked in the oil and gas industry, and the family traveled extensively, following him around many U.S. cities. "I can't say that it was my childhood dream to follow in my parent's footsteps, but once I started studying this profession in college I soon understood that it was very interesting for me," says Mr. Nance. In 1984 he received the diploma of mechanical engineer and started working with Chevron. Apart from the U.S. projects, Mr Nance has also worked in West Africa, Indonesia, Kuwait, and other locations

"Under operations control"

BRADFORD C. ROSEWOOD, OPERATIONS REPRESENTATIVE, CHEVRON NEFTEGAZ, INC.:

– After more than 30 years working for the Operations Department in the Chevron Pipeline Company I was selected as the CPE operations Representative and given the opportunity to take part in the construction of the Marine Terminal facilities near the city of Novorossiysk. My first assignment was to lead the installation of the third pig launcher/receiver.

In late 2010, the CPC placed an order with Bluewater for the design and manufacture of SPM-3. The first batch of equipment was delivered to Novorossiysk in early 2012.

In May 2012, the construction permit was obtained by CPC allowing "Koksokhimmontazh" to begin excavation works at the shore facilities.

One of their priority tasks was to dig a seven-meter trench across an access road, which was necessary for connecting the new pipe to the subsea pipeline. Heightened safety requirements were applied to all earthmoving, pipe alignment and welding works as they were performed within the security zone of SPM-1, which was in operation and where tanker loading was not interrupted.

In July 2012, shortly after the arrival of the pipe lay vessel from Saipem, the offshore pipeline installation operation began. This subsea pipeline construction and SPM installation process ran nonstop for 12 weeks.

Thanks to the "Incident and Injury Free" policy (IIF), good communication, availability of work plans, appropriate work surveillance and oversight by PMC Chevron, CPC Marine Terminal Operations Department and Saipem, the offshore construction project was accomplished on schedule and incident free.

While the onshore and offshore construction were under way, the new pig launcher/receiver was being manufactured by TD Williams at their UK facility.

The onshore and offshore construction was completed in the fall of 2012, and on December 24 2012 all newly installed equipment was connected to the systems of control, communications and power supply.

We were now ready to proceed with the commissioning phase. This was the first time the "fishbone" practice was employed for commissioning, which has since this proved good and is currently widely used by CPC for planning finishing commissioning and putting into operation efforts.

Upon successful completion of testing, the Acceptance Commission gave us permission to remove the blinds and introduce oil into the new onshore equipment and pig launcher. We were now connected to the new subsea pipeline and SPM-3, and received approval to begin comprehensive testing!

On August 20 2013, the third and final step was completed. It included the selection of a tanker for oil loading testing, which is commonly referred to as the 72-hour comprehensive trial run. CPC Commercial Department worked closely with Chevron Shipping to ensure compliance with all applicable standards of the Russian Federation during the performance of these works and subsequent obtainment of the operations permit.

SPM-3 was officially turned over for operation to the CPC Marine Terminal on December 24 2013, thus becoming the first system in the CPC Expansion Project to be 100% constructed, commissioned and put into operation. Dozens of tankers have been loaded at the new SPM to date. ■

Materials of Chevron PMC specialists (pp. 20-23) compiled by Julia Starodubets

"Meeting international and Russian standards"

SUSAN ELIZABETH ANDERSON, DEPUTY DIRECTOR - ONSHORE MARINE TERMINAL, CHEVRON NEFTEGAZ, INC.:

– So much has been accomplished since the start of the construction and installation work back in 2011. Phase 1 construction efforts at the Tank Farm have progressed dramatically toward completion. The project is on track to deliver Phase 1 mechanical completion by March 31, 2015 and additional operational Tank capacity by May 2015.

The Caspian Pipeline Expansion Project has been an interesting one from the very beginning not least because it is definitely not a typical capital construction project for Chevron. The shareholders instructed Chevron Neftegaz, Inc. to take part in the project as a project management contractor and to apply the company's own project management system.

In the CPC project, Chevron Neftegaz, Inc. is in charge of managing the tank construction work performed by the General Contractor "Koksokhimmontazh", including all earthmoving, construction of the pipelines, infrastructure facilities and utility lines, installation of instrumentation and controls and electrical equipment.

As it was the first capital construction project for CPC since the completion of Stage 1 back in 2001, the requirements for contractor mobilization continued to be refined with the project's evolution. As early works began, Novorossiysk experienced one of its harshest winters in 20 years, which brought problems in the construction effort and caused even greater concern for keeping people working on the project safe when roads were not passable and power supply was unreliable.

So, what can we say that we have accomplished? The early works were completed in about six months resulting in the temporary site office, accommodation camp and medical facilities. The major earthworks were completed in March 2014 – at its peak this construction activity involved more than 100 units of heavy construction equipment and over 200 dump trucks. As of today, we have completed the installation of all three tanks scheduled for Phase 1. Painting and piping installation works are still ongoing. All major concreting has been completed and interior building finishing is currently under way.

In the course of construction we had to overcome several unforeseen technical challenges. The first one was the discovery of an area containing approximately 250,000 m^3 identified as bad conditioned soil in the area of Substation No. 1. We had to completely remove that soil, which was unusable for the needs of the project, and bring in an equivalent amount of new suitable backfill instead. There were several more unfortunate discoveries during the excavation of the foundation sites for Tanks Nos. 6, 9 and 10. The ground fractures discovered required an engineering solution to ensure that the foundations for the tanks possessed the necessary structural integrity.

Other technical challenges we confronted in the course of project implementation included the withdrawal of the original design company from the project and the change of design institute. Our task was to erect tanks and auxiliary facilities in compliance with both Russian and international standard requirements. Despite all these difficulties, we have managed to achieve considerable progress in the construction of the Marine Terminal's Tank Farm as well as in building up relations with our Russian colleagues.

We also devote much attention to sharing popular conceptions from various cultures represented in the project's international team. In all things, we have developed a warm working relationship and a mutual respect for each other, which will, no doubt, help us to be better professionals on our next projects. ■

"We will persevere and prevail"

TIM V. SMITH, PROJECT QUALITY MANAGER FROM CHEVRON NEFTEGAZ, INC.:

– The word "quality" is used often, but what does it really mean? A simple definition is, "There are no defects to equipment or documentation that delay construction activities or impact long-term reliability of the completed facility". This is easier said than done; however on the CPC Marine Terminal Expansion, we are accomplishing this mammoth feat!

Chevron (as Project Management Contractor) is utilizing "international best-practice" Quality Management techniques.

Plans and procedures are developed and technical requirements are monitored in order to create well-adjusted work processes for quality assurance and observance of basic quality requirements. Coordination of subcontractors and suppliers and risk based inspection (RBI) are performed in order to ensure reliable static data in respect of quality indicators and to channel limited available resources into critical tasks. Furthermore, we inspect the facilities of our suppliers and perform incoming inspection of materials to make sure there are no defects prior to the start of installation. Appropriate measures of monitoring in respect of each of the Project's disciplines as well as the practice of control points and reverse control points are provided for under the Monitoring and Testing Plans (MTP). The project employs only highly skilled and competent personnel, which is confirmed by certification and knowledge checks. All the already mentioned project elements are strictly verified for compliance with the ISO 9001 standard requirements in the course of Quality Audits.

Quality assurance and quality control measures at the Marine Terminal are not limited to the scope of construction work in Novorossiysk. In effect, this is a global initiative where major engineering and production efforts are performed in Russia, Finland, Croatia, Italy, Greece, Germany, the Netherlands, France, Spain, the United Kingdom, India, Canada and the United States.

For critical equipment manufactured in remote facilities, "we were there" for Vendor Quality Assessments, Pre-production Meetings, Inspections during critical manufacturing stages, Factory Acceptance Tests (FAT's), and Final Inspections for shipping. We have had full-time Inspectors at some remote RF manufacturing facilities (such as Saratov, Chelyabinsk, and Izhevsk) for nearly 2 years.

These proven techniques, coupled with the stringent requirements of Russian normative documents, will produce a "world-class" facility that will well serve CPC and its shareholders for 40 plus years!

Assurance of Quality at the Shore Facility and Tank Farm Construction sites in Novorossiysk has been successful; but has not been without some challenges.

For example, in the early stage of construction, we had hairline cracks in some concrete pours. The situation was investigated and mitigation in the form of revised "slump control" and water resistance ratings were employed. Furthermore, the Quality Group was involved in coordinating with CPC and the Independent Technical Oversight the allowable limits of verticality of the series shell rings during the construction of the first three tanks to ensure compliance with the API-650 international standard.

In conclusion, the Quality Effort for the Marine Terminal is not a "sprint"; it is a "marathon". We are now complete with more than 30km of this 42km marathon; but we are well-hydrated and have adjusted our stride to the roughness of the road. We will persevere and prevail! ■

"Safety as a Value"

MATTHEW JAMES PORTACCI, HEALTH, ENVIRONMENT AND SAFETY MANAGER (HES) CHEVRON NEFTEGAZ, INC.:

– If your goal is to realize a Construction Project with a Tank Farm for 1 mln m^3 of oil, with more than 1,500 km of pipe line and a number of pump stations, when you need to involve over 1,500 people from different countries and companies, it becomes a real challenge. How can you do it promptly, to high quality, in accordance with schedules and budget, local and international laws and regulations, and be SAFE?

You may say that we should put SAFETY as a PRIORITY, because human life is priceless. But the bad news is: PRIORITIES can CHANGE. When you are behind schedule, productivity may become the number one issue. When you are running over budget, costs become your first priority. So, where should SAFETY be? The only way to keep your crew safe and sound is to look on SAFETY as VALUE. VALUES do not change.

The Caspian Pipe Line Expansion Project enlisted help from JMJ Associates and their copyright program "Incident and Injury Free" (IIF). IIF is more than a program, it's a culture where people are encouraged to speak openly and honestly, rather than to be afraid of being punished; to take on safety as a value and follow the rules and regulations because they want to, and not because they have to. It is a culture, where the leadership consistently demonstrates care and concern for the workforce and values human safety.

Building such a culture is most about changing a mindset. For Chevron PMC, this wasn't a new direction, but for "Koksokhimmontazh" as a Contractor and all the Subs it was totally new.

The IIF Leadership Team composed of Chevron and KKhM people is constantly monitoring the situation, and based on the feedback they are receiving a number of "fit for purpose" IIF workshops have been created.

18 months ago, we started developing our "IIF Driving" program. Furthermore, we developed and implemented the "IIF Driving for Passengers" workshop, where all staff and even family members get a better understanding of how they can influence safety while just being in a car as a passenger or walking as a pedestrian.

We also implemented the CPC-initiated "Kilometer Diet Program" that reduced our mileage by more than 10% and eliminated unnecessary trips and risks.

One cornerstone of having a good safety culture is a robust "Behavior Based Safety" (BBS) observation process. BBS is a peer-to-peer observation and feedback process that recognizes good behavior and safe conditions, as well as helps identify unsafe behavior and conditions. One of the areas, where unsafe conditions were observed, was related to eye protection. The problem was particularly acute for welders and installation workers.

Therefore, an "Eye Safety Campaign" was launched on the project. We took a special approach for this. We involved people who knew from their personal experience what eye protection meant. Two blind individuals from the Russian Society of the Blind were invited: they had lost their eyesight in work related accidents. Their willingness to share their stories and provide encouragement to all of us to follow safety rules was an effective message that was powerfully delivered. Based on these workshops a training DVD has been made for distribution on distant locations.

By the end of the first half of 2014, we have achieved more than 10 mln man-hours worked without time loss due to accident or injury. We are proud of that, but we understand that we still have a long way to go. ■

Construction amidst the rocks

THE MARINE TERMINAL'S TANK FARM IS LOCATED IN A HILLY AREA, 9 KM FROM THE SHORE FACILITIES.

FROM ALL OVER RUSSIA

The Tank Farm, or TF, as specialists often say for short, is located away from population centers and is completely hidden from view by surrounding peaks. If you happen to pass it, you only learn about its existence from the road signs: there's a turn to Abrau-Durso, a turn to Ozereevka and finally – an exit ramp to the Tank Farm. An almost straight, steeply rising access road took us to the entry checkpoint. There we put on coveralls and PPE, including hard hats, eye protectors, special vests and special boots with metal-lined tips, and then "Koksokhimmontazh" Deputy Project Manager Vladimir Khartonyuk led us to the construction site.

Judging by the area code license plates on the cars parked by the workers' accommodation camp, people from all over Russia are involved in the CPC Tank Farm construction effort. As regards Vladimir Khartonyuk – an experienced specialist with a record of handling a number of similar projects – he came to Novorossiysk from Nakhodka. There, on the Pacific coast, he supervised the construction of the "Transneft" Far East Oil Terminal at the special marine oil port, Kozmino – the end point of the Eastern Siberia – Pacific Ocean oil pipeline.

AN ILLUSTRATED SUMMARY

An imposing scene appeared before us. There are roughly 75 hectares of land on several levels with around 2,000 workers and some 200 pieces of machinery involved in the effort of erecting six 100,000 m³ tanks, a transformer substation, firewater pump station, fire station, operations service base, lightning protection system and other facilities.

Since the tanks are erected in two phases, they are currently at different stages of readiness, which makes the whole site a very real "illustrated summary" of the tank farm construction! For example, Tank No. 8 (we had visited the site in the second half of July 2014) was ready and even painted, Tanks Nos. 4 and 6 were being painted, while the Phase 2 tanks (Nos. 7, 9 and 10) had barely risen above ground level. Two shell courses had been welded together at Tank No. 10 and one at Tank No. 9. At Tank No. 7, a circular foundation and a watertight screen were being installed.

Vladimir Khartonyuk

The scope of work involved in constructing a tank is best characterized by the fact that some 3,000 tons of structural steel need to be welded together for each tank to be erected.

HARDER THAN CONCRETE

The scope of the earthwork is impressive. Some 2,5 mln m³ of rock had been excavated and around 2 mln m³ processed and laid. Incidentally, most of the processed rock was marlstone – a heavy, stone-like sedimentary rock. It is even denser than concrete.

Tank foundation reinforcement

– One m³ of concrete weighs 2,500 kilos, while the same volume of marlstone is as heavy as 2,800 tons, Khartonyuk told "CPC Panorama". – The mineral is heavy, viscous and hard to shatter.

When performing earthworks at the site of Tank No. 7, "Koksokhimmontazh" deployed a special cutter-loader. However, that was the only site large enough to accommodate a machine like that. The mighty machine proved effective and fast in turning the solid rock into ballast and loading it onto a dump truck. This allowed avoiding working with a considerable number of hydro-hammers, crushing machines and excavators. The cutter-loader processed a total of around 100,000 m³ of rock.

– As things stand today, the Tank Farm expansion Phase 1 scope of earthwork is almost complete, – Khartonyuk went on. – What is left to do is only pipeline backfill and landscaping.

WE WILL COMPLETE WORK ON TIME!

Another challenge is the installation of onsite utilities. The Tank Farm Expansion Project calls for laying a total of around 500 km of onsite utilities! Since the routes of new cables cross existing utility lines and process pipelines, the work needs to be performed with special precaution. For example, trenches are excavated manually, without even small-scale machines. An additional problem for the contractors was connected with the fact that during the Tank Farm's original construction tie-ins were not moved to outside the grounds, which is why additional measures had to be taken to ensure their safety.

For overcoming these and other problems effectively a CPC Construction Headquarters was established, which, vested with a considerable power of authority, helps to minimize bureaucratic red tape.

– Earlier, we had to wait up to 10 days for an answer even to a very simple question, and that held us back considerably, – Khartonyuk explained. – Now, all decisions are made noticeably faster, without red tape.

Over the period of three years approximately 70% of the construction work had been completed at the CPC Marine Terminal's Tank Farm. The remaining 30% has to be done in one year. A challenging, but quite manageable goal. Without doubt, the Expansion Project has already entered its homestretch, though it won't be a short one.

– Of course, we will complete it all on schedule. "Koksokhimmontazh" has never let anybody down, – Khartonyuk assured us as he said goodbye. ■

By Pavel Kretov

Alexander Soloviev:
"There is always room for improvement"

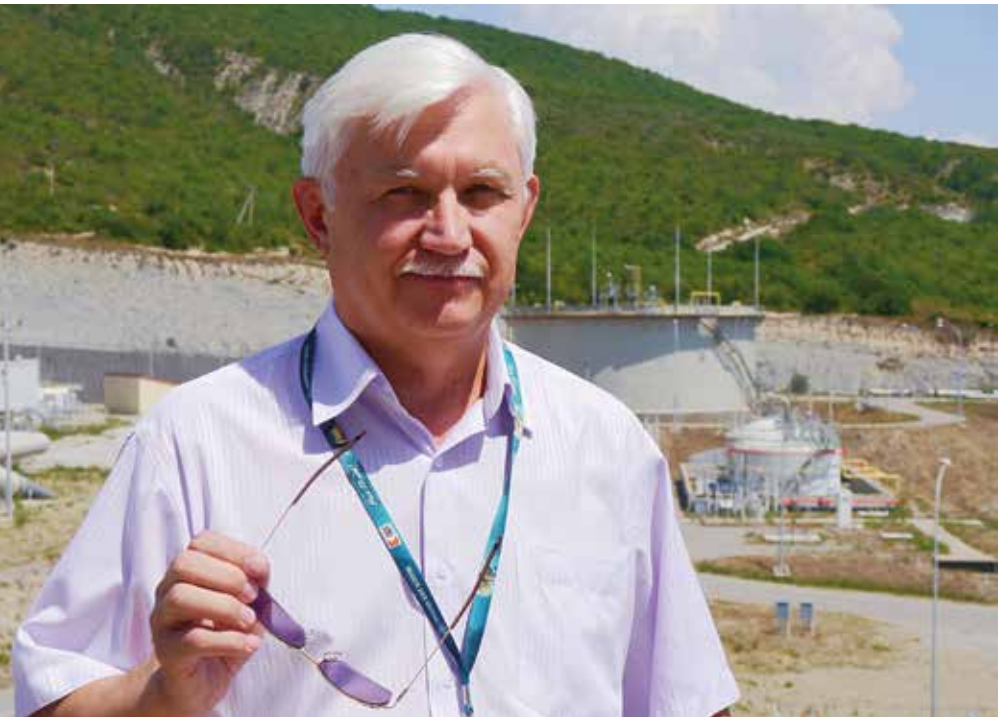
"FIRST VISIT TO THE MARINE TERMINAL? NO? THEN YOU HAVE TO SEE SOLOVIEV FIRST FOR INSTRUCTIONS!" - SUCH WERE THE PRESS SERVICE'S WORDS OF WELCOME ON OUR ARRIVAL AT THIS TIGHTLY REGULATED CPC FACILITY. WITHIN A FEW MINUTES WE WERE TALKING TO ALEXANDER - LEAD HSE ENGINEER.

Our meeting was to feature in this issue of "CPC Panorama" – we could not have done a full story on the Marine Terminal without covering the area supervised by Alexander Soloviev. Any and all activity in the shore facilities or on the tank farm construction and operation sites is only undertaken with special permission from the safety experts who closely monitor every stage of the work in progress.

– The scope of your responsibilities is pretty much covered by your job title – but what does it involve in practice? – we ask Alexander.

– It's not easy to put into a few words...– he replies. – Ensuring the safety of work carried out by contractors both for the Expansion Project and as part of maintenance – access clearance, risk assessments, identifying the necessity to use protective gear and so on. That is how we start every day.

Then the next thing is to check the workplace conditions for the Company staff, and in this task we are assisted by a hired laboratory that performs the measurements and tests we request. They used to call it workplace assessment – he continues, – but now it is "working conditions special evaluation".



Lighting, the microclimate, potential injury risks... Sometimes we hear directly from staff who are unhappy with something at the workplace and we try to identify the problem. If anything proves to be out of line we set out to return it to normal.

– What particular problems have been solved in this way?

– Here's a recent example. Several members of staff working in the main building were complaining about headaches. We called the laboratory straightaway, measured the geomagnetic fields and discovered the reason: the commercial frequency cables next door. People were promptly removed from the room and relocated to safe workplaces. At the moment materials are being purchased to screen the cable lines.

Alexander Soloviev has been at the Marine Terminal for nine years, and he has noticed the continuing improvements in the facility's working conditions.

– This administrative building No. 2 where we are having this conversation is six years old. Before that we had a temporary single-story office inherited from the builders, – he recollects. – It was a wooden unit, a fire hazard. The workplaces in the new premises are excellent and as a safety expert I consider this to be of great importance. The modern Marine

Terminal buildings are completely safe in all respects and designed to withstand a scale 9 earthquake as required by building regulations in this region. Before joining the Consortium Alexander was employed by the Nizhnevartovsk subsidiary of a large oil company where he took part in a full repair of the well. There he was face to face with oil, so to speak.

– At CPC we never see the oil and can only follow its progress to the tankers by reading the meter, – he remarks. – The terminal is top-notch in terms of its environmental safety. All equipment has been tested and the tank farm reservoirs have concrete barriers against oil spillage. The project is also extremely well thought through as far as the shore facilities are concerned. When representatives from the Fire Safety Inspection Service, the Federal Service for Environment, Technology and Nuclear Oversight, the Federal Service for the Oversight of Consumer Protection and Welfare, the Russian Federal Fisheries Agency and other regulatory bodies visit us they say: "We have yet to find a better facility, you must arrange guided tours!" This kind of praise is a result of the Company's integrated industrial safety approach. It's the best validation of the joint efforts of the Marine Terminal experts and their colleagues from the Moscow office.

Alexander Soloviev has been at the Marine Terminal for nine years, and he has noticed the continuing improvements in the facility's working conditions

The facility has its own Production Control Regulations Policy describing in detail monitoring procedures for work progress, workplace conditions and industrial safety; provisions are in place for daily on-site check-ups and standards for maintaining documentation are set. Initially this is taken care of by the head of the tank farm, his deputy and shift masters and the check-up results are recorded in the industrial, fire, environmental safety and workplace conditions log. At the next level this monitoring is taken over by the Regional Standing Commission for Production Control. The third stage is assigned to the CPC Standing Commission for Production Control chaired by the General Director of Operations First Deputy or the Chief Operations Manager. The commission consists of managers, heads of departments and divisions and experts from the Moscow office. One of the main goals that the experts at the Marine Terminal are striving to achieve is the Expansion Project implementation – increasing the tank farm capacity and ensuring maximum efficient construction schedules within the limits of operational safety. It is discussed every Friday during a meeting with Chevron and building contractor representatives, the deputy regional manager, maintenance manager and HSE experts.

– Any check-up is about raising any shortcomings as well as unavoidable reprimands to certain members of staff. Do you ever have to deal with misunderstanding or resentment? – is our final question to Soloviev.

– When, upon finding that something is not up to standard, we approach the mechanics or electricians with suggestions for improvement, everyone is perfectly all right with that and reacts accordingly, – he says. – It never happens that someone brushes us aside, saying: "I'm not on the production side - no time for you!" There is always room for improvement. Having reached a certain level we go deeper into the operational network and uncover further goals - just as it should be. We move from the more substantial problems to smaller scale ones, which at first glance seem less important. But specialists know that in oil transportation there are no such things as trifling matters. ■

By Ekaterina Suvorova

The axiom of environmental well-being

THE CPC MARINE TERMINAL IS ONE OF FIVE MAJOR TERMINALS OFFLOADING OIL AND OIL PRODUCTS INTO TANKERS IN THE PORT OF NOVOROSSIYSK. THE FOUNDATION FOR THE TERMINAL'S HIGH ENVIRONMENTAL PERFORMANCE WAS LAID AT THE STAGES OF DESIGN AND CONSTRUCTION OF THE MARINE TERMINAL'S FACILITIES.

ADDED TO THE ARMORY

In order to prevent the release of oil vapors into the atmosphere, crude oil storage tanks have been equipped with specially designed floating roofs with tight secondary lock valves.

CPC demonstrates its social responsibility not in words, but in deeds. While implementing large-scale construction under the Expansion Project and increasing oil offloading volumes, CPC is pursuing one of its top priority goals – reducing the environmental impact of its activities

Effluent from equipment and pipelines flows into subsurface drainage systems toward the high-tech water treatment systems of the Marine Terminal. The maximum safety method of tanker loading was adopted: from single-point moorings located far from the shore.

Originally, electrical power for the needs of the Marine Terminal was generated locally. Power generators were driven by turbines equipped with suppressors of fuel combustion end product generation, which allowed reducing toxic wastes by 75%. Despite that, these turbine generators were still responsible for up to 80% of the total amount of emissions into the atmosphere. "Total amount" sounds a bit strong in this context since the remaining 20% were represented by the emissions generated in the oil transportation, storage and loading reduced to the minimum. Nevertheless, the Marine Terminal management decided to eliminate the impact of turbine generators by switching the facility over to external power supply. In 2012, CPC, at its own expense, built the "Neftenalivnaya" substation for connection to the "Kirillovskaya-Solnechnaya" high-voltage power line, leaving the generators to serve as a backup power source.

The result was a 60% reduction in the Marine Terminal's annual total emissions in 2013.

POSSIBLE, BUT NOT EXPEDIENT

Asked whether it was possible to achieve any further reduction of atmospheric emissions, Marine Terminal environmental engineer Liliya Flyaum replied:

– Yes, it is possible, but only at the expense of tanker loading efficiency, i.e. at the expense of our operating efficiency, which is absolutely inexpedient from both the economic and environmental viewpoints. Why should we do that given that even working at maximum loading rate we have never violated hygiene standards for atmospheric air quality at the boundary of the established sanitary protection zone, not to

mention residential areas closest to the Marine Terminal, which is located beyond that boundary located in close proximity to the Marine Terminal?

Emission reduction is not a goal in itself, – she remarked.

sites) is 1 km. Here I would like to explain that the radius of a sanitary protection zone is the distance from the nearest residential area, at which hygiene standards established for such areas must be observed. It is set at 500 m for the Tank Farm and 250 m for the shore facilities.

Having already once received the official confirmation of compliance with ISO-14001, CPC permanently demonstrates its environmental performance management efficiency and permanently improves its environmental responsibility

– Emission reduction is necessary when pollutant concentrations in the air of residential areas exceed the applicable hygiene limits. For this purpose Maximum Allowable Concentrations (MAC) are established. MAC is the concentration of a given substance (determined by public health experts) which is low enough to have no impact on humans living in the affected area. It our case, the level of pollution is 0.8 MAC. Therefore, it would be unreasonable and illogical to reduce the efficiency of tanker loading for the sake of additional emission reduction. All the more so given that tanker loading operations are performed at a 5 km distance from the shore, and light hydrocarbon fractions disperse almost completely before they reach the coast. There is no sanitary protection zone established for the SPMs because the maximum radius of such zones (for oil loading

Nevertheless, in order not to cause discomfort for people living near the Marine Terminal or coming here on vacation, CPC specialists have performed calculations to determine wind conditions (velocity and direction), at which the odor of oil flowing through the pipelineinto tankers may reach the shore. If such a likelihood exists, CPC immediately reduces the rate of tanker loading.

Over the five days of our business trip, my colleague and I visited all Marine Terminal facilities, including the Tank Farm and shore facilities. We even went into the sea on a tow-boat to watch supertanker loading from the permitted safe distance of 1 km, and we did not smell the odor of oil.

Such environmental well-being is not something that comes with

Liliya Flyaum

the wave of a magic wand. CPC has developed and is implementing a comprehensive Industrial and Environmental Monitoring Program.

As we were told, the environmental safety of CPC activities is ensured by a unique system of automated tracing of all processes related to oil transportation and its loading into tankers, capable of prompt detection and immediate response in the event of a leak. It is common knowledge that there has not been a single emergency of this kind during the entire term of the Marine Terminal's operation. And, the locals are certain, they should never occur in the future, as they are doing their best to ensure the reliable operation of MT facilities.

Tank Farm construction is performed in compliance with all applicable environmental regulations

Vineyards are doing well in the neighborhood of the Marine Terminal

Dolphins are the true masters of the oil harbor at the Marine Terminal

Out in the country

KONSTANTIN SAVCHENKO, COMMUNICATIONS MANAGER, AND SANAL CHIMKINOV, SENIOR SCADA ENGINEER, WHO BOTH WORK AT THE OPERATIONS CONTROL CENTER, ARE AMONG THOSE EMPLOYEES OF THE MARINE TERMINAL WHO HAVE SETTLED IN FAMILY HOMES NEXT TO THEIR PLACE OF WORK.

DINING-ROOM FOR THE DOLPHINS

The sea area around the oil terminal is a true dolphin sanctuary. They feel perfectly safe there. Dolphin pods follow ships and sometimes delight people with real performances as they leap high above the water. Why are these intelligent animals so attracted to the oil harbor? The fact is that this facility is strictly guarded –unauthorized marine traffic is prohibited here, so there is no fishing, including illegal fishing. Thus, a rich food supply exists for the dolphins, which is why they are so drawn to the oil harbor. People are also drawn to the seashore here – close to the CPC Marine Terminal, land that is available for residential construction is probably the most expensive in the area, and demand is growing. Many of the Marine Terminal employees also live close to their place of work; some of them were even able to build their family homes in Yuzhnaya Ozereevka village, the closest location to the onshore facilities. They are the lucky ones – their commute lasts only a few minutes! And don't forget the mountains, clean sea and clear air… Those of us who live in big cities cannot even dream of such perks! ■

By Ekaterina Suvorova

Konstantin Savchenko, along with his wife and two sons, moved here in 2001 for his new job at the Operations Control Center, when the building of the CPC pipeline was completed.

Eventually, Savchenko and his wife came to the conclusion that it would be beneficial for their children's health if they moved to ecologically safe Yuzhnaya Ozereevka. So they built their family home there.

Soon the family celebrated moving into the new housing development close to the Marine Terminal.

Here, living out in the country means enjoying the clear sea air and invigorating landscapes. The Savchenko family like spending time together – they hike in the mountains, bike the uncharted forest trails, and listen to the birds singing. For many years now, when in the summer they come to the Black Sea shore, they watch the same familiar site: a family of dolphins playing in the clear water next to the Marine Terminal.

The Chimkinov family purchased land in the village of Glebovskoye and built a house there. What attracted them there was the quiet rural life next to a beautiful mountain range, closeness to work, and naturally, the local school, which their elder daughter is now enrolled.

"It is wonderful that our Consortium is actively supporting the school in Glebovka! CPC bought furniture, computers and interactive educational boards for the school," says Sanal Chimkinov, the head of the family. "The football field that the consortium built for the school (the best one in Novorossiysk!) regularly hosts football tournaments, and our local team is always winning prizes!"

Sanal points out that there are many new houses under construction in the settlement. He is sure that when CPC has finished building the kindergarten, there will be even more people who want to settle here.

Konstantin Savchenko sons

Friendly Chimkinov`s family

Deputy Regional Manager for Marine Operations Igor Florovskiy

At the cutting edge

THE CPC MARINE TERMINAL EMPLOYS A METHOD CURRENTLY USED AT ONLY ABOUT 40 OIL TERMINALS IN THE WORLD.

LOADING FROM UNDERWATER

Tankers now moor not at the wharves of the oil port, but at the single-point moorings (SPMs) located within 5 km of the shore. SPMs are floating buoys attached to the sea bed with the help of suction anchors weighing many tons. Having moored at an SPM, tankers are connected to the oil pipeline system by flexible hoses. During loading, tankers move freely around the SPM, driven by the winds and currents.

The buoys are specially designed for marine conditions and the sea bed topography and are capable of withstanding a gale equal in severity to the heaviest one that has occurred here in the last 100 years. Moreover, the use of single point moorings ensures very convenient navigation for heavy-tonnage vessels reducing accident risk in the Marine Terminal harborage area.

A 42-inch diam (approx. 1,000 mm) pipeline is laid to each SPM from the shore. Steel subsea arteries run up to an end manifold. Flexible hoses run from the manifold to an SPM and two lines run from the SPM to a tanker. Similar single-point moorings are used at oil terminals in Northern Europe, West Africa, the Gulf of Mexico and the Persian Gulf.

According to specialists, few oil terminals in the world can compare to the CPC Marine Terminal in terms of equipment and work organization.

– For good reason, our terminal has won first prizes at various international competitions. We are indeed leaders in technology and best practices, – Deputy Regional Manager for Marine Operations Igor Florovskiy told “CPC Panorama”.

Igor Florovskiy knows what he is talking about. From the bridge of a supertanker he has seen oil terminals in many countries around the world employing very different techniques, and is very familiar with the methods and processes both onshore and aboard a vessel. He can find a common language with the captains and promptly resolve any issues, which may emerge during tanker loading.

SPM-3 arrives in Novorossiysk. 2012

A WELL-ADJUSTED MECHANISM

As of February 2014, after SPM-3 was put into operation, the Marine Terminal's shore facilities acquired a configuration which allows offloading up to 70 mln tons of oil annually. Already today, due to the increase in the pipeline transmission volumes, the CPC Commercial Department has ordered to service two tankers daily.

Possibly, the Marine Terminal team is somewhat happier than the project's other teams because they have the opportunity to see the results of their work not only as diagrams displayed on computer monitors or oscillating instrument pointers, but by looking at the tankers departing from the SPMs.

I shared this thought of mine with Igor, but he dismissed the idea as a "layman's approach".

– A layman is unable to comprehend the complexity and thoroughness of work performed by a team of true professionals for the terminal to function as a well-adjusted mechanism, and the huge scope of preparatory work performed to ensure safe offloading, – he explained.

The team performs pre-mooring and weekly equipment checks. Every summer, the SPMs' cargo handling system is washed with seawater delivered by a specially chartered tanker. The service life of the underwater and floating hoses is two to six years, upon the expiration of which they are subject to mandatory replacement. Hose replacement is a very labor-consuming operation since each section weighs around five tons.

Also, working at a depth of 60 m is a challenge for a diver, involving a special air chamber and a special hose supplying diving gas. While a diver is busy working at the sea bed, another one is in "standby mode" – fully equipped and ready for immediate diving if something goes wrong. Other crew members are also on the alert.

A special air chamber is used for diving to a 60 m depth

INTERNATIONAL STANDARDS COMPLIANT

A diver may work at the sea bed for no more than 30 minutes. The way back to the surface will take another 90 minutes, with stops for decompression. Incidentally, all diving operations at CPC are performed to meet both the relevant international standards and the requirements established by the Russian Diving Service.

– In 2014, for example, 55 days were allocated for SPM-2 maintenance. But this is only enough in theory. In reality, allowances always have to be made for the weather. This year, it has been far from favorable, and we hope to complete the work in 70 days, – Florovskiy continued. Divers cannot work if sea swell is over 1.5 m, velocity of currents above 1.5 knots, etc.

Once a year, the Marine Terminal's subsea pipelines are subjected to an external inspection. This work is performed by ANO NITs "Coastal Zone Dynamics" with the help of a controllable deep submergence vehicle.

During such inspections, specialists verify pipe position on the ground, the presence of washouts, concrete erosion, and, if necessary, give recommendations for additional diving work.

CPC Marine Terminal operations are arranged to be fully compliant with the requirements of the International Maritime Organization (IMO). CPC and contractor personnel strictly observe all IMO requirements, including those set out in the International Safety Guide for Oil Tankers and Terminals, which regulates all processes and safety measures to be taken during oil tanker loading.

MOORING MASTERS

Preparations for safe loading begin long before tanker's arrival at the terminal. First, the loading window nomination request from the cargo shipper is considered. Before replying, specialists study the tanker's history of operations and its technical characteristics for compliance with the requirements established by the relevant international organizations and oil companies. Upon completion of these formalities the tanker is considered to be "preliminarily approved" and is permitted to head for Novorossiysk.

However, this is only the first stage of the vessel compliance assessment. Before permission is given for a vessel to enter Region 670 (CPC Marine Terminal's operational responsibility area), a mooring master must come on board.

Following the relevant checklist, he performs the vessel's final examination, which includes verification of all required documents and certificates and a visual inspection. If everything is in order, the mooring master reports "ready" to the port operations manager and the latter replies with permission to approach the SPM. Now all formalities are complete, and it is time to proceed with mooring and subsequent loading!

This is the moment to say a few words about the work of mooring masters. They are also improving their skills all the time and receiving new equipment. Nowadays, they use satellite-based positioning to monitor distances to the moorings. Soon they will receive special shock-resistant and water-protected computers to have access to all necessary information from SPM sensors and SCADA, including loading speed, quantity of loaded oil, etc.

A fleet of the contractor company Lamnalco comprising 11 vessels is based in the neighborhood of the terminal to service CPC offshore facilities. Their largest vessel is the mighty tug "Lamnalco Chaika" with a displacement of 1,020 tons. The vessel is absolutely unique as it was built specially for the CPC project. It is equipped with a diving system allowing diving operations to be performed to a depth of 100 m and a set of hoisting gear to perform SPM maintenance. Furthermore, "Lamnalco Chaika" carries a whole arsenal of emergency response equipment, including a fire-fighting system, oil skimmers and booms.

During the entire period of its operations, CPC has never allowed a single emergency situation to occur, and the "Lamnalco Chaika" emergency response systems have been used only for drills. The only exception was an incident which occurred several years ago, when "Lamnalco Chaika" responded to an SOS and towed a catamaran-yacht in distress to the shore. The yacht was taking part in a race and had broken its mast.

– Since oil transmission volumes have increased, the Lamnalco fleet will soon be reinforced with a fourth tug. Currently, the tug is being built to a customized design, and is scheduled to arrive at the terminal in May 2015, – Igor Florovskiy completed his story. ■

By Pavel Kretov

Single-points mooring undergoing maintenance

Beauty and might

THEY ARE ELEGANT AND HIGH-TECH. THE SNOW-WHITE OUTLINES OF THEIR PIPELINES ENHANCE THE IMPECCABLE BLUENESS OF THE SEA. AS YOU MIGHT HAVE GUESSED, WE ARE SPEAKING ABOUT THE MARINE TERMINAL SHORE FACILITIES. INDEED, IT IS VERY BEAUTIFUL THERE! THE LOCAL STAFF, HOWEVER, HAVE GOTTEN USED TO THE SCENERY AND ARE NOT THAT EUPHORIC. FOR SPECIALISTS, IT IS MOST IMPORTANT TO ENSURE THE SAFETY AND RELIABILITY OF OPERATION.

IN AUTOMATED MODE

At the beginning of our conversation with the shore facility team they told us about the engineering solutions employed to ensure both process safety and the safety of the facility as a whole. To begin with, there is an automated fire-fighting system. A closed-loop firewater network, where pressure is permanently maintained at 13.4 kg, is installed underground. Jockey pumps are used to maintain required pressure in the firewater system, – process units operator Denis Astashkin explained.

– In case the jockey pumps fail to cope, there are two auxiliary pumps and two main pumps available here. The Marine Terminal's fire-fighting system functions in automated mode. If the fire-detection system goes off, a fire alarm signal is generated, and any location of fire will be immediately extinguished with the help of manual, mobile or stationary fire-fighting means.

The Marine Terminal team cares about the planet's extremely valuable resource – fresh water. The firewater reserve is formed from atmospheric precipitation. All rainwater collected within the production sites goes into the firewater reserve after appropriate treatment.

Denis Astashkin

RULES ARE THE SAME FOR EVERYONE!

Having noticed that our escorts always carried gas masks on them, we could not refrain from asking them why was it necessary given the existing level of safety?

– Yes, it is safe here and the alerts are only training ones, – oil product pump station operator Ivan Spitsyn agreed. – But the rules require carrying this PPE and the rules are mandatory for everyone.

– Strict compliance with all requirements and procedures is part of the facility's strict regime, which is a key to safety, – Denis Astashkin echoed.

WORKAHOLISM PLUS A BIT OF LUCK

Denis maintains he is the "richest" person here because he is in charge of all equipment operated at the terminal, except the equipment directly involved in oil transmission. His sphere of responsibility includes such critical equipment as the water treatment purifying liquid wastes and producing drinking water, air conditioning, fire-fighting, storage and distribution of diesel fuel – no more and no less. Looking at the young man speaking enthusiastically about his work left no doubts that he had fulfilled himself in his profession. Then, we asked Denis to tell us about himself.

He is not an "old-timer" at the Marine Terminal, Denis believes for anyone to become a member of the team they need to be a workaholic – and have a bit of luck.

Indeed fortune smiled upon this young man from Novorossysk when CPC Marine Terminal recruiters appeared at the Marine Academy exactly when he was graduating.

– They looked at the diplomas, and found me, among others, fit for their team. – Upon arrival here, a "mentor" was appointed who explained to me how things worked here.

Over 14 work shifts I took practical training while working together with various specialists. Also, I took theoretical studies and passed exams. I must say, I really like my job!

– Is there much difference between the things you learned at the Academy and the knowledge you really need in practice?

Ivan Spitsyn

– I studied similar equipment – diesel engines, pumps, pipelines... Of course, here there are certain specific features, but I've already sorted them out.

– Don't you regret you didn't go to sea as you'd dreamed?

– The sea is right here. I continue with it at the yacht club of the Marine Academy and I go sailing...

SWITCH ON YOUR IMAGINATION

All the facilities of the Marine Terminal work as a single "organism". Vladimir Dmitriyev has a long record in the oil industry and is currently acting manager for Marine Terminal maintenance in charge of the Tank Farm and shore facilities. Speaking to "CPC Panorama", he tried to draw a picture of the Marine Terminal's "life".

– The Tank Farm currently comprises four tanks with floating roofs for crude oil storage. They are installed 252 m above sea level and each has a working capacity of 100,000 m^3. Driven by gravity, oil flows from the Tank Farm through a dia 56 inches loading pipeline to the shore facilities. Then, the oil is fed through a pressure reduction unit and metering stations and flows further, through dia 42 inches subsea pipelines, into the tanker via single-point mooring facilities – SPMs. Thanks to the launch of a third SPM within the framework of the Expansion Project, loading can now be performed from two SPMs at a time at a rate of 12,700 m^3 per hour at each SPM.

This illustrates the power potential of the modest-looking CPC Marine Terminal's Shore Facilities. And that potential will grow with the progress of the Expansion Project.

Transportation volume currently equals around 33-35 mln tons of oil per year. After the completion of the Expansion Project, it will be increased to 67 mln tons per year, – Vladimir Dmitriyev remarked, finishing the interview. ■

By Ekaterina Suvorova

Vladimir Dmitriyev

CPC Marine Terminal has a powerful automated fire protection system

BEST OF THE BEST

BOTH MANAGMENT AND STAFF AT THE CASPIAN PIPELINE CONSORTIUM (CPC) HAVE NO DOUBT THAT OUR TEAM IS ONE OF THE BEST IN THE PETROLEUM PIPELINE INDUSTRY. IT IS STILL VERY SATISFYING TO KNOW THAT OUR FOREIGN PARTNERS SHARE THIS OPINION.

In August 2014 Fanira Akhmetzyanova, a laboratory quality engineer at the CPC Marine Terminal, won the gold medal at the international competition "Best in Profession" at the Mozyr LOCS in Belarus.

Five of the major Eurasian oil pipeline companies took part in these professional competition: JSC "AK Transneft", JSC "KazTransOil", JSC "Ukrtransnafta", JSC "Gomeltransoil Druzhba", CJSC "CPC-R". Traditionally, each company chooses its best specialists, who in turn go through a rigorous process of preparing for the competition by studying regulatory documents, expanding their knowledge of theory and honing their practical skills. Even though it was the first time that the laboratory technician from the CPC Marine Terminal was taking part in the competition, she stood her ground against her competitors.

Fanira shared her impressions of the competition: "I wish to thank the competition organizers at JSC "Gomeltransoil Druzhba"! The atmosphere at this professional competition was so warm that it felt like there was more friendship than competition among us. It felt like we were co-workers at the same laboratory, not representative of different states."

At the competition, our contestant achieved a small advantage right after the practical stage. It was important not to lose that at the theoretical knowledge examination. Fanira Akhmetzyanova did not make a single error and was deservedly placed first by the judges.

Vitaly Pavlov, chief metrologist at CJSC "CPC-R" said: "Does our contestant's success reflect the general level of professional excellence of laboratory quality engineers at CPC? Without a doubt! I would even add that this success is the result of a systemic approach – we organize competitions in the Consortium's regions and remain a permanent participant at the multi-laboratory comparative competitions in Russia. Here is a fact that is a clear indication of our staff's high qualifications: more than 90% of our specialists have a college degree and regularly attend career enhancement training." ■

By Pavel Kretov
Photography courtesy of TransPress LLC

For the youth of Glebovskoye

WHEN AT THE TURN OF THE 20TH CENTURY THE TRANS-SIBERIAN RAILWAY WAS UNDER CONSTRUCTION, THE WORKERS WOULD ALSO BUILD BRIDGES, ROADS, TELEGRAPH AND POWER LINES, HOSPITALS AND CHURCHES, COLLEGES AND SCHOOLS... TODAY, A CENTURY LATER, THESE GREAT TRADITIONS ARE BEING CARRIED ON BY THE WORKERS OF ANOTHER IMPORTANT INFRASTRUCTURE PROJECT – THE CASPIAN PIPELINE CONSORTIUM.

It may take the people from the villages next to the CPC Marine Terminal some time to remember that just 15 years ago there was nothing but a narrow dirt-track leading to their houses and summer cottages. It was the pipeline workers who brought many of the blessings of civilization to their homes. And today this systematic large-scale charity activity continues...

EDUCATION VIA SKYPE

The "CPC Panorama" journalists received a warm welcome at the regular public school (municipal budgetary general education institution) No. 31 in Glebovskoye village. From the first moments at the school it was obvious that it has close ties with the international Consortium – or is being "sponsored" by it, if we use the Soviet-era term. There is a sign with the familiar logo at the entrance, and a big colorful stand telling about the pipeline company's activities.

– The Consortium has really done a lot for us, – school principal Angelika Kalinobrodskaya expresses her gratitude. – The rooms are equipped with modern computers, interactive boards, air conditioning and new furniture.

In 2013 the school equipped a room for distance learning at CPC charity expense. It is meant to be used for working with handicapped children who are sight – or hearing-challenged, or for pupils who have missed classes due to illness.

– The teachers used to visit such pupils at their homes. Now there is the additional opportunity to keep the educational process going via the Internet, with the help of the school site, using Skype, – she continues.

UNESCO SCHOOL

When new study directions, such as project activities that require the skills of independent information search and presentation making, were introduced as part of the new state educational standards, the students of School No. 31 turned out to be among the best trained in the Krasnodar Region and were ready to face these innovations.

No surprise! All the students are completely familiar with computers as the school received 25 notebooks alone from the CPC charity providers.

The students also have long been using the World Wide Web for communication with their friends from different countries. They have a great deal to discuss with their peers as School No. 31 is part of the UNESCO Associated Schools Project Network. Here they study UN and UNESCO activities, the problems of natural and cultural heritage preservation, and issues of observance of human and children's rights.

The school principal showed no false modesty in saying that the students have shown great achievements in sports as well as in their studies. In the recent regional competitions the children took first place in streetball and volleyball. No doubt in time their results will be just as good in mini-football: CPC presented the school with a perfectly equipped football ground with Tartan turf, certified by the Federation Internationale de Football Association (FIFA).

UNIQUE IN DESIGN

Having wished the teachers every success in educating the younger generation, our journalists moved on to take a look at a CPC Expansion Project facility construction site. Our readers are now probably imagining a pumping station, a laboratory or a tank, but they are wrong. Here in Glebovskoye village the Consortium is building Kindergarten No. 18 as part of the Expansion Project social program. The project costs including the design works amount to almost 140 mln rub.

– Our company started building the kindergarten in September 2013, – says Sergei Stepanov, director of "Novoshipstroy" LLC. – By mid-summer 2014 the facility was more than 50% ready.

The utility engineering works are completed. About 80 people are involved in the building works.

Children from the sponsored school enjoy posing with a new issue of the CPC corporate magazine. "Are we going to be in it, too?" – they keep asking.

Sergei Stepanov and Igor Vinogradov

When the grown-ups are trying to please the children, everything goes just right!

– The kindergarten construction works are being conducted to a unique design also by "Novoshipstroy" LLC in cooperation with "Novorosgrazhdanproekt" CJSC, – adds Igor Vinogradov, the regional and local authorities communication manager (Group for Laws and Regulations Issues, Expansion Project). – It would be enough to say that it is going to be the only project of its kind in Novorossiysk with its own swimming pool. The kindergarten will be equipped with independent power systems – a boiler station operating both with gas and liquid fuel, and waste treatment facilities.

The roof-work was completed in August 2014. The roof is the source of the builders' special pride as its complex structure allows it to blend harmoniously into the surrounding landscape.

Improvement works on the surrounding area are being conducted in parallel with the construction of the building itself. The construction workers promised to preserve all the precious coniferous trees that grow here, and also to plant more trees, lay out flower beds and grass lawns, and create paths.

In accordance with its contract with CPC, "Novoshipstroy" will not only build but fully equip the childcare center with furniture, kitchen, laundry and ironing equipment, toys and playground accessories so it is ready to operate. At the end of the year the house-warming party will be celebrated by 160 children. To make it even better, the contractors are already choosing a spot for a Christmas tree. ■

By Pavel Kretov

A dream fulfilled

WHO HAS NEVER DREAMT OF GOING ON A JOURNEY ON A HOME-MADE RAFT? WITH A HEAD WIND, VAST RIVER VIEWS AHEAD, A ROMANTIC ATMOSPHERE, RISK, ADVENTURES... MANY MUST HAVE DREAMED ABOUT THIS – BUT FEW HAVE FULFILLED THEIR DREAMS. ALEXANDER BOROVSKY IS ONE OF THOSE WHO HAVE.

Alexander Borovsky putting together his raft

HE MADE THE DECISION ON HIS 55TH BIRTHDAY

Alexander Borovsky has worked as a driver at the CPC Marine Terminal since 2002. This past January he celebrated his 55th birthday and in the summer he went on a rafting trip on the Vaga river in his native Arkhangelsk Region with a team of family members who shared his plans.

– A raft was my childhood dream, Alexander says. – As young people, we also used to swim down the river on logs: we would hammer them together with two planks and head out. I am originally from the Velsky District, which consists of numerous villages scattered along the bank of the Vaga river that flows into the Northern Dvina. Since the Northern Dvina flows into the White Sea, in theory we could have said 'Hi' to the White Sea from the Black Sea.

The raft ready to sail off

They traveled about 200 km on a journey of five days and four nights. Alexander says that they would have kept going but his companions were frightened by the weather that suddenly worsened. It was really scary: a heavy thunderstorm, lightning right close to them, and the small raft with its metal mast seeming so solitary and vulnerable on the endless ribbon of the river. So they had to make for land. The thunderstorm subsided but they decided to end the journey there.

THE COSTS OF BUILDING A RAFT

Building a raft turned out to be difficult, stressful and costly. All the components of the future raft were prepared in Novorossiysk. Then, the resulting 315 kg load was shipped by plane to the Arkhangelsk Region. Already there, Alexander Borovsky and his niece's husband Viktor sent all the equipment to the district center Velsk, the starting point of the journey.

– My workmates also helped, in word and deed. Personally I was very worried that we would make fools of ourselves and that the raft wouldn't be able to sail.

The freshly cut wood was moist and very heavy. How would it behave in the water? There was also so much other stuff: the mast, paddles, equipment. There were four of us. Would the raft withstand the load? Or would we have to sail knee-deep in water?

However, all such fears proved groundless. The raft turned out reliable and mobile. It floated smoothly. Although the launch was still not without stress.

– When we were putting together the raft on the river bank, a local TV reporter came to see us,' Alexander recalls. 'They had already been told by someone that something extraordinary was going on at the river bank. When the reporter found out that we were going to sail in two hours, he asked us to wait until their cameraman arrived. So we ended up being filmed as we sailed away.

When asked about the financial aspect of the endeavor, Alexander replied that it proved costly but he did not regret spending the money because "the experience was worth it". He would "just keep on sailing and sailing.

– It was so scenic and romantic! – Alexander explains. – I love traveling.

I would probably be able to survive outdoors under any conditions.

OFF TO ADVENTURES

On the first day, the travelers still lacked experience and paddled fiercely. When we were pretty exhausted, we thought - why paddle? It was supposed to be a fun sail, not a race. So we started to sail calmly, only sometimes adjusting the position of the raft in the river. We cooked meals (all necessary cooking facilities were on the raft), watched the surrounding views and enjoyed the beautiful,always changing landscapes. There was amazing nature around, little villages, the taiga... We would sometimes stop to fish, or to pick mushrooms, or to 'splash in the water like kids.'

According to Alexander, at first the wind bothered them a lot, which was why it once took them three hours to pass a single village. On top of that, the river meandered a lot in some places and the banks were grown very thickly, so it was not until after midnight that they found a spot to spend the night. They set up tent, pumped up the mattresses and lay down to sleep. And even though they had brought warm clothes, they were still freezing. In addition to the cold nights, another issue were the mosquitoes, gad-flies and horse-flies. Not even repellents helped against the latter. However, the main challenge were the occasional shallows that made the travelers beach four times.

– One time we got really stuck, at Borvinka, – Alexander remembers. – We started to push. We had no energy left. I was already thinking that sand would come over us and we would stay there like a monument. But the four of us knuckled down, went at it - and made it.

JUST DO IT

Despite such challenges he's experienced, Alexander Borovsky isn't planning to rest on his oars – he's determined to repeat the journey.

– Although next time we'll work more closely on our itinerary. We will pick a river, there are plenty out there: the Onega, Mizen, Pinega, Ustya, Vata... You can sail to your heart's content!

Camping

It also emerged in our conversation that a raft was only Alexander Borovsky's little dream. His big dream is still ahead.

– When I was a teenager, I worked at our school forestry every summer since the 5th grade. We were planting pine trees on pieces of waste land left over after fires. You would go over the waste land, planting trees in one direction before lunch and in the other direction after lunch. And you could keep going like that for several days. But the following year, you would come back and see that only a few plants had survived. Because the work was done just to "check the boxes". But in reality we were just leaving the little trees to fend for themselves, so that only the lucky ones survived. So my dream for when I retire is to go back to the North, build a little log house, get some land and organize a school forestry, in order to plant pine trees again, but this time using proper methods and with my soul in it. I mean, Velsk pine trees have been famous since long ago. They were used for ship construction in the days of Peter the Great. The pine trees were so high and slim. Probably you can't find one like that anymore...

Everyone should have a dream. And it does not matter whether it's big or small, easy or challenging to accomplish. In any case, a dream makes you move forward and not focus on day-to-day hardships – it shines on your life and makes it bright and meaningful. To get closer to your dream, you just need to take the first step, like Alexander Borovsky did. He has only one piece of advice:

– Just do it. Some people didn't believe me, they would say: "How will it sail? Where will it end up?" But everything went smoothly. The journey was a success. ■

By Ekaterina Krapivko

Just like at the Olympic Games, the competition started with the teams' parade

Olympic levels of safety

THE CPC EXPANSION PROJECT SAFETY (RUSSIAN FEDERATION CONSTRUCTION PROJECTS) OLYMPIAD WAS HELD IN LATE AUGUST IN THE STAVROPOL TERRITORY. THE ORGANIZERS OF THE EVENT, WHICH TOOK PLACE ON THE "PS-4" OIL PUMP STATION, REMINDED ITS PARTICIPANTS OF THE ULTIMATE IMPORTANCE OF PROJECT SAFETY.

Guests were greeted by William Simpson, CPC Deputy General Director, Projects & Engineering, Igor Lisin, Oil Pump Station Construction Coordinator for the Russian Federation, Vladimir Kozlov, Administration Head of Izobilnensky region, and Alexander Nakonechny, Head of the Sovetskorunny Rural Community welcomed visitors to the Olympiad.

The competition program consisted of such exciting events as "Fun Starts", "A Friend in Need is a Friend Indeed", "Powerful Minds", "Wonders in

the Turns", and others; the list of competitors included subcontractors of the CPC Expansion Project, "Transneftstroy" LLC, "EFESK" Group of Companies, OJSC "Stroynovatsiya", "Contact-C" LLC, "Velesstroy" LLC, CJSC "KHM Trust". Staff members from the CPC subcontractor companies gave spirited performances at the amateur talent show, while representatives of the shareholder companies and members of the CPC management team served as competition judges. The winners of different categories received their awards from Sergei Ruzanov, CPC Project Management Director, Igor Lisin, Oil Pump Station Construction Coordinator for the Russian Federation, and William Simpson, Deputy General Director, CPC Expansion Project and Engineering.

Stavropol performing arts ensembles continued the entertainment. A festive dinner was followed by colorful fireworks. Safety-related events have long become a good tradition at CPC. Safety specialists have no doubt that the level of safety at company facilities will continue to improve. ■

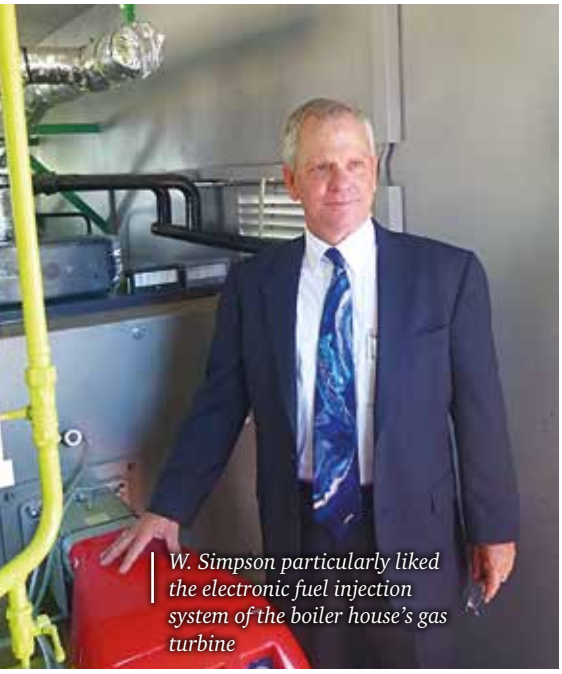
By Nadezhda Cherednikova

Dennis Fahy (right) and Vincent Richard were active participants in the Safety Olympiad

The winners received medals and commemorative awards

William Simpson wishing good luck to the competitors

Team spirit and positive attitude are key to success



W. Simpson particularly liked the electronic fuel injection system of the boiler house's gas turbine

Bringing warmth to children

THE DISTRICT CENTER OF THE YENOTAYEVKA DISTRICT IS TWO HOURS' DRIVE AWAY. WE ARE GOING WITH REPORTERS AND WILLIAM SIMPSON, DEPUTY GENERAL DIRECTOR FOR PROJECTS AND ENGINEERING, TO THE OPENING OF A SCHOOL'S BOILER HOUSE.

The boiler room is an important contribution to the reconstruction of the local school. The implementation of our social project at the Yenotayevka District of the Astrakhan Region would not be complete without it.

At the premises of the municipal budgetary general education institution "Yenotayevka Secondary School", we were awaited by regional government officials, leaders of the district administration, teachers, students, parents and the mass media. The atmosphere was festive. CPC has invested 10 mln rub in building the boiler house. Earlier, the Yenotayevka School underwent total reconstruction financed from charitable funds of the Consortium. An "emergency surgery" was performed to replace windows, doors, heating systems and roof coverings of the "seriously ill" building. Specialists "reanimated" utility lines and "rehabilitated" dangerous wall areas in the gym. Its condition is now stable and good. The overall cost of "reanimating" the school building was 32 mln rub.

However, one problem remained: it was cold at school. The school building is more than 30 years old, and each year it was increasingly difficult for the old walls to keep the heat in. — It was freezing in classrooms in the winter and the children were constantly sick. The school often had to be closed for quarantine, — Ekaterina Nikitina, chair of the school governing council, explained to us. Now the problem is solved and the students do not have to be afraid of freezing temperatures anymore. The boiler house is powerful enough to also serve the Children's Rehabilitation Center located nearby. It was custom-made using high-technology Italian equipment. According to the contractor's representative, commissioning will start in September, immediately after authorization documents are received. Specialists will set the engine and the heat supply is scheduled to start on October 16 of this year. Notably, the boiler house will be able to function during emergency power shutdowns since it will have a gas generator installed.

A momentous occasion: W. Simpson and the Head of the Yenotayevka District S. Mikheyev cut the traditional red ribbon, and the headmaster of the school O. Stepova is given a symbolic key and the technical passport of the boiler house. Guests of the event inspected the boiler house and the building of the Yenotayevka School.

Let there be heat at school! The momentous occasion of cutting the symbolic red ribbon

Head of the Yenotayevka District S. Mikheyev explains the details of the boiler house's mechanism to W. Simpson

The Manager of the Expansion Project did not hide his happiness: — I am happy that we can be helpful to people who live in the regions of our operations. Nothing compares to the impressions from such events where you can witness the results of charitable activities of the company, talk to local people and see that thanks to our work, their lives are a little better today than yesterday. We are not stopping at what has been accomplished, we are moving forward. Specifically, construction of an up-to-date school athletic field will start in Yenotayevka this fall, funded by CJSC CPC-R.

A little guided tour was organized for the CPC guests: they visited the Svyato-Troitsky Cathedral, viewed the collections of the Yenotayevka Local History Museum, and were introduced to local traditions.

The event was festive but tasteful, without unnecessary pomposity or formalities. The local authorities are doing their best to support community investment by business in general, and CPC programs in particular.

W. Simpson and the Senior Priest of the Svyato-Troitsky Cathedral Hieromonk German easily found a common language

Mr. Kuchumov, the Deputy Minister for Industry, Transport and Natural Resources of the Astrakhan Region, told reporters: — CPC-R is not only a reliable economic partner of our region, but also an excellent example of a socially responsible company.

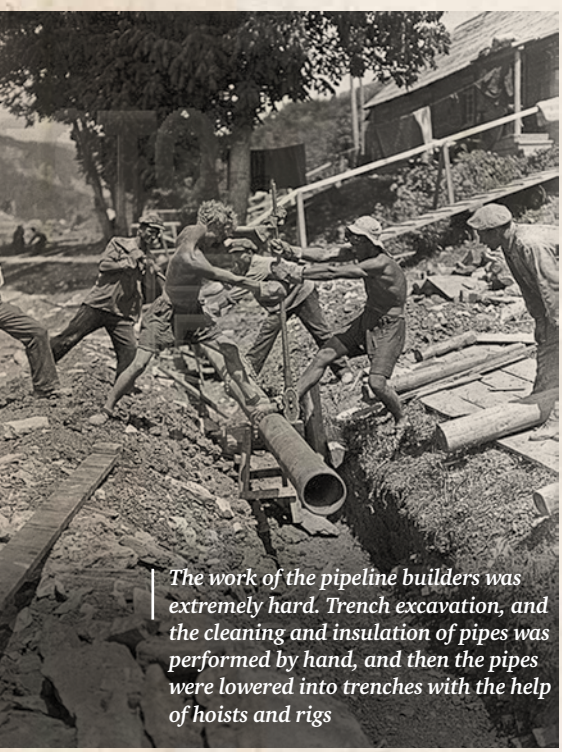
— A serious comprehensive approach and annual implementation of social programs not only strengthen our relationship but also enhance the company's image in the local community — he emphasized. — It is wonderful that there exists a business that cares about people.

But what matters most is that the children will not be freezing in the winter. They are warm now, thanks not only to gas and electricity but also to the care and attention of CPC. ■

By Alexander Detkov

The first pipeline of Kazakhstan

NEXT YEAR WILL MARK THE 80TH ANNIVERSARY OF THE START OF THE FIRST PIPELINE IN KAZAKHSTAN, GURYEV-ORSK. THIS DATE IS ALSO SIGNIFICANT FOR ALL PIPELINE WORKERS OF THE POST-SOVIET ERA: DESPITE MULTIPLE HARDSHIPS THE CONSTRUCTORS BUILT THE OIL PIPELINE THAT FOR A WHILE WAS CONSIDERED THE MOST POWERFUL IN THE SOVIET UNION AND EVEN EUROPE.



The work of the pipeline builders was extremely hard. Trench excavation, and the cleaning and insulation of pipes was performed by hand, and then the pipes were lowered into trenches with the help of hoists and rigs

A CHALLENGING TASK

In the early 1930s the Soviet government set itself the ambitious task to achieve first place in the world on most economic indicators. According to those plans, in 1937 oil production had to reach the level of 130 mln tons. The main production regions that were supposed to provide almost 85% of all such oil were situated far from the center. Also, in response to the forced industrial development of the Soviet country more and more new consumers had appeared, which made the transportation issue even more complicated.

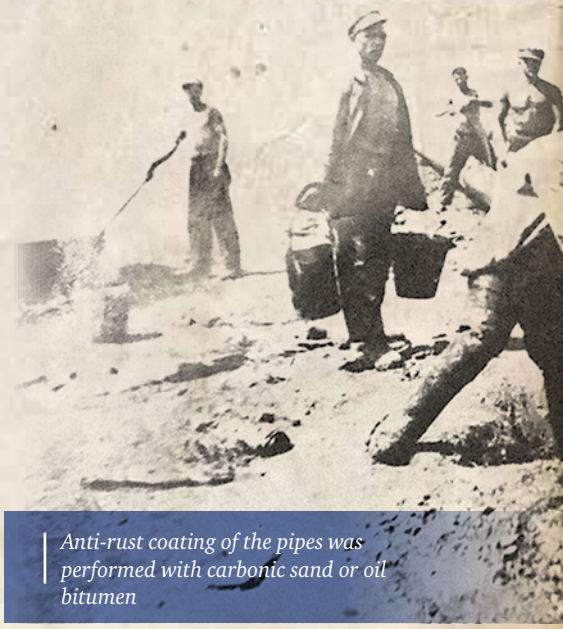
The Guryev-Orsk pipeline only appeared in the second five-year industrial plan of the USSR State Planning Committee in June 1931, and already by October construction was under way. The 847-kilometer-long pipeline was to go through the endless steppe and regions with no rail transportation of any kind to connect the rich oil-bearing regions of the Caspian with the oil-processing plant in Orsk. "The Orsk plant in its turn will provide oil products to Western Siberia, the southern part of the Urals, the Eastern Siberia region and a small part of the Central Volga region," – "Izvestiya" newspaper wrote in June 1932.

The country gave all it had to equip the builders up with the necessary technical resources: almost 3,000 tons of pipes, 50 "International" wheel tractors, 20 "Caterpillar" chain-track tractors, 50 trucks, two crane shovels and other machinery. The situation with skilled labor was even worse. There were only 40 welders, three foremen and five instructors working at the pipeline construction sites. The job of the front-line workers was extremely hard; sometimes the labor outflow from the sites would reach 300 people per day, despite the harsh punishments used by the administrative-command system.

LOGISTICS DIFFICULTIES

Trench excavation, and the cleaning and insulation of pipes was performed by hand, and then the pipes were lowered into trenches with the help of hoists and rigs. Anti-rust coating of the pipes was performed with carbonic sand or oil bitumen; at certain segments, which required particularly strong insulation, pipes were wrapped in sackcloth prior to treatment.

In September 1932, the USSR People's Commissar for Heavy Industry Sergo Ordzhonikidze received a letter informing him of "threatening difficulties" in the construction of the Guryev-Orsk oil pipeline. The issue of pipe delivery from the



Anti-rust coating of the pipes was performed with carbonic sand or oil bitumen

Mariupol factory needed to be solved urgently. Due to the low capacity of the narrow-gage railway, no more than 1.5 km of pipes, half of the plan, could be delivered to the construction site. 30 new platforms allocated from the Vyatka factory did not arrive on time, while the old ones had completely degraded. Due to lack of tractors, 80% of which were out of repair and awaiting spares, pipes had to be welded in sections each containing 5-6 pipes; without tractors it was impossible to pull the pipes together for continuous welding.

The initial materials and equipment transport route through Stalingrad also proved to be unfortunate. The city was unprepared to handle such volumes of cargo. By autumn there were around 1,300 tons of various equipment "stuck" in the city, including the pipes already produced in the second quarter. Transportation was only speeded up by opening railway deliveries from Stalingrad to Astrakhan.

For transportation of equipment the Guryev-Orsk pipeline builders would often use "ships of the desert" - camels

UNDER THE PEOPLE'S COMMISSAR CONTROL

Sergo Ordzhonikidze was personally monitoring the construction process, but at the beginning of 1934 it was still experiencing great difficulties. There were shortages of insulation materials, wood, forage, water transport and petrol. The animal-drawn transport was also lacking - in the Aktobe region there were only 60 carts working instead of the 450-500 planned. Any attempt to use additional carts met with resistance from the regional Party committees that were transporting food products under the conditions of famine that followed collectivization. As a result, after 18 months of work only 240 km of the line were ready – and only one year remained to weld the rest of the 650 km. And the builders managed it!

5,000 people were mobilized to the construction site, which made all the difference. Another 60 mln rub were additionally allocated from the state budget. Having displayed unequalled heroism, the Soviet pipeline builders managed to cope with all hardships despite the extreme conditions in which they had to work. By the end of 1935 the main part of the Guryev-Orsk pipeline construction works was completed and the builders let the oil in. "Pravda" newspaper wrote about this event on December 8 1935: "For the last several days the city has been living in anticipation of oil. The huge river of oil is coming closer to Orsk by every hour. This morning the oil crossed the river Ural. It is now 9 km away from the city. By night the 5,000 cubic meter tanks will be filled with Emba oil."

The oil pipeline was built completely from domestically-produced materials and fitted out with Soviet equipment. The pipeline capacity reached up to 1,200 mln tons of oil per year, and pressure in it was maintained by seven pumping stations. It is interesting that during the war years the pipeline was turned into an oil-products pipeline and was used to deliver Baku oil products that were transferred to Guryev via Astrakhan, right to the front. ■

By Pavel Kretov

IN THE PREVIOUS ISSUE OF "CPC PANORAMA" WE ASKED YOU, DEAR READERS, TO TELL US ABOUT YOUR WONDERFUL CO-WORKERS. IT IS A PLEASURE TO SAY OUR APPEAL MET WITH A RESPONSE. THAT WAS HOW THIS NEW SECTION THAT WE ARE INTRODUCING TODAY CAME ABOUT. WE ARE PUBLISHING THE FIRST EFFORTS AND LOOKING FORWARD TO NEW PHOTOS AND FURTHER STORIES ABOUT YOUR COLLEAGUES.

The driver who is a local history expert

Amangali Saginbaev

Driver Amangali Saginbaev has been behind the wheel since 1988. He comes from a family of oilmen: his father Zholdybaj worked in the oilfields in Zhylyoisky district, and his brothers are employed at the Prorva oilfield not far from Tengiz. His wife is a lab technician at the TCO Plant. Amangali himself started as a mechanic at Prorvaneft (Tengizneftegaz) OGPD, continued as an operator and a driller and is more than familiar with the smell of oil and every production detail.

He was born and raised in Zhylyoisky district, loves local nature and knows everything. As a child he used to listen on the shores of Lake Karash to his mother's stories about the place they lived in, the history of the region and its people. It fostered his interest in the nature and history of his homeland and the legends told by his mother of the batyrs who defended it remained in his heart forever. Amangali's father made his own contribution in encouraging his son's curiosity by having ancestors who had lived close to the Akmeshit area on the Bortau plateau. It is with immense love and fondness that Amangali still recalls his childhood memories of the stunningly beautiful chalk mountains rising as high as a seven-story building and how they were only clearly visible at dawn, before turning into a mysterious unattainable mirage in the heat of the day...

As a CPC-K driver Amangali enjoys the views he has known as a child on the road. He recognizes every hill, every plot of land and can navigate any country road.

I offer this simple story by way of sincere gratitude to Amangali for his help in gathering material for an article about geographical place names along the pipeline route. ■

Marzhan Diarova, chief translator for the administrative department in the Atyrau office of CPC-K.

A man of his word

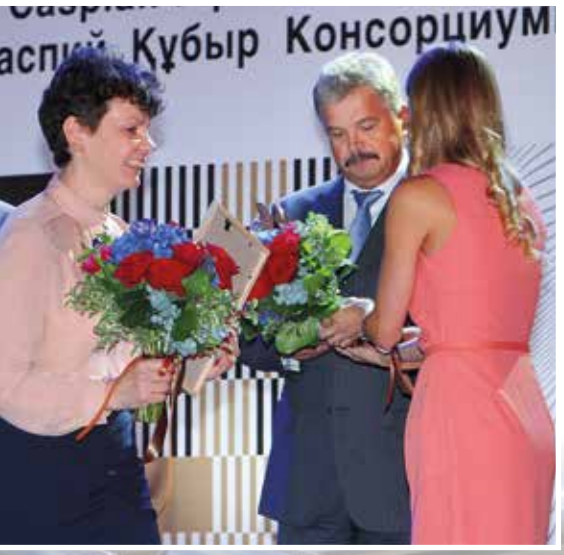
What can be said about the "Atyrau" PS operator Sergey Rozhkov? He is a responsible man who will not hide behind someone else's back. A man of his word he does as he says. He is generally very outgoing and fun to be with, also an avid fisherman.

Sergey was born in Russia, in the Perm region. Moving at some point to Atyrau he became as fond of it as of his native city. Here he made friends and got married. Together with his wife Tatiana, they are raising two children. ■

Andrey Keshishyan, control, measurement and automatic equipment technician, "Atyrau" PS, Republic of Kazakhstan

Sergey Rozhkov

An effective 'oil' year



AT THE BEGINNING OF SEPTEMBER EVERYONE AT CPC CELEBRATED OIL, GAS AND FUEL WORKERS DAY. ALL ALONG THE TRUNK PIPELINE ROUTE – FROM THE TENGIZ PLAINS TO THE MOUNTAINS OF NOVOROSSIYSK – FELLOW WORKERS EXCHANGED GREETINGS ON THEIR PROFESSIONAL HOLIDAY, SHARED THEIR IMPRESSIONS ABOUT THE PAST 'OIL' YEAR AND REPORTED THEIR ACHIEVEMENTS.

The Moscow office staff marked the holiday by the ancient Kremlin walls in the historical Manezh building on Mokhovaya street. In a festive mood CPC General Director Nikolay Brunich congratulated those who had done especially well and received the "Honorary Oilman" award and presented certificates of acknowledgment and diplomas from the Ministry of Energy of the Russian Federation.

– It was a difficult 'oil' year for us and yet a very effective one, – Nikolay Grigorievich remarked. – The third SPM was commissioned which allows us to load two tankers daily. Construction of the Expansion Project first phase facilities on Russian territory has been completed at PS "Astrakhanskaya", "Komsomolskaya" and "Kropotkinskaya". In eight months of 2014 the CPC pipeline system has shipped over 26 mln tons of crude oil and we are confident, given the consistent increase in throughput volumes, to hit the annual rate of 40 mln tons. This is a result of all CPC staff working closely together as an expert team.

– Only a few years back a week was considered successful if we were able to load five or six tankers at the Marine Terminal, – First Deputy General Director of Operations Dennis Fahy added, – whereas last week we loaded 10 tankers! We are indeed becoming one of the largest pipeline companies in the world, at the same time as providing our facilities with the highest stability and safety levels. ■

By Pavel Kretov

Caspian Pipeline Consortium: a time-tested international project

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CPC Marine Terminal is the end point of Tengiz – Novorossiysk trunk oil pipeline

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