Petrotec
MAGAZINE
THE NEWS THAT MATTERS
ISSUE 7: 2021

EMISSION REDUCTION

Petrotec بترونك

Contents

MESSAGE

FROM OUR MANAGING DIRECTOR

With another whirlwind year soon ending, Petrotec has continued to adapt according to the ongoing changes to rules and regulations. We were quick to react to the pandemic and prioritized the safety of our staff, whilst still managing to operate an extremely busy corporation, especially our service division that is entirely reliant on our people. I am proud to announce that the Petrotec service division was one of the first in Qatar to have all our staff vaccinated.

Petrotec have managed to establish remote assessments for our CompEx courses here in Qatar. Whilst the trainees still need to physically attend the training (to carry out the practical element of the course) Petrotec has gained approval from JTL to conduct remote assessment, ensuring we can continue to provide critical training and certification to our clients during these times.

I am excited to announce that Petrotec is one of the first few companies in Qatar to receive the "Authorized Economic Operator" Status from the General Authority of Customs. We obtained this status after a thorough audit of our logistics process and facilities. This approval demonstrates Petrotec's commitment to comply with customs regulations and by receiving this status, our imports will be cleared faster resulting in shorter delivery times of our products to clients.

With environmental considerations being a continuous concern for the oil and gas operators in Qatar, many have implemented ambitious strategies to reduce greenhouse gas emissions by 2030. These objectives have OEMs across the oil and gas spectrum, who are working to support them. In the feature article of this magazine, we at Petrotec, are pleased to present some innovations from our OEMS which will support oil and gas operators in their quest to achieve their emission reduction goals.

Some exciting new additions include the expansion of our Ras Laffan Industrial City (RLIC) facility with an additional 6000sqm laydown area, and we are in the process of commissioning a new 500sqm fully equipped Sand Blasting & Painting facility – also in RLIC. We are excited to have our clients and principals visit us at these new, state-of-the-art, facilities. Our new QFab facility in Al-Wukair has proved to be a great move, with new, key tenders being signed. We also have our KOOP team at this facility, who have been making great progress in the dewatering industry.
Ocean Team Qatar and Solarca Qatar continue expanding their support in the lube oil flushing and chemical cleaning services across the GCC. Ocean Team produce an in-depth case study every month, explaining how they overcome challenging requests, that we post on LinkedIn.

We invite you all to follow us on social media (LinkedIn, Facebook, and Instagram) to stay up to date with all our products, services, and activities. We look forward to seeing results from our new paid media digital marketing strategy, improving our - and our principal's - brand awareness all over the world.
I would like to take this opportunity to thank our customers for their continued support, especially during these unpredictable times. Thank you to our dedicated employees.
We look forward to another successful and exciting year ahead for the Petrotec group.

Clifford W. Lasrado
Managing Director

Safety critical communication

Hazards are inevitable in any industry. The sooner thses are identified, the sooner we can rectify it with proper actions and precautions. If hazards are not identified properly, they may lead to incidents.

When it comes to continuous process industries, engineers and technicians are required to be available regularly to carry out operations and or maintenance. During shift changes, there needs to be a proper handover between the process owners or technicians. Generally they conduct a handover between them. The goal of a handover is to communicate accurate, reliable, task relevant information across duty changes, thereby ensuring continuity of safe and effective working. This handover is defined as transferring responsibilities and tasks from one individual or team to another and it is one of the best-known type of safety critical communication. A handover is a critical activity with a direct influence on production and safety. Poor handover is known to cause operational problems such as wasting resources, reworks etc., all of which can result in considerable revenue loss and accidents.

It's all about communication. International safety guidelines clearly states that reliable communication is highly critical to safety. Effective communication during a duty handover provides a strong layer of protection against major incidents. People tend to underestimate the complexity of the communication process, and consequently overestimate their ability to communicate effectively. Good communication between management, supervisors and technicians at an informal level, is a feature of low incident.

All human communications are prone to error and misunderstandings. The complex the process, the possibility of error being more, is a common criteria. So it is critical to check whether the information has been received and understood correctly. Unreliable communication can stem from issues including:

- Missing information
- Unnecessary information
- Inaccurate information
- Poor quality of information
- Misunderstandings

Enhancing communication skills

It is fundamental that every company ensures its employees are aware of the duty handover procedure and what is expected of them. It is also essential that an organisation looks to improve certain attributes in their workers' communication skills so that handovers can be conducted in a clearer and more structured way. These attributes include but are not limited to:

- Providing unambiguous information
- Choosing the correct method of communication
- Selecting the right tone
- Nonverbal cues
- Being assertive where necessary
- Confirmation of understanding messages

Conclusion

Poor shift handover has contributed to some of the world's worst disasters. Organisations must promote a positive safety culture and improve their approach to communication at all levels so that effective duty handovers are conducted, and incidents are prevented. Duty handover improvements require a systemic approach, including procedure, training, assessment, monitoring and auditing.

To effectively communicate, we must realize that we are all different in the way we perceive and use this insight as a guide to our communication with others.

Petrotec submersible pump repair and testing Facility

As part of service localization initiative and ICV petrotec has set up the state of the art submersible pump Repair and Testing facility in Qatar. Previously the repair and testing of submersible pumps and motor were not available in Qatar and all these units were repaired and tested in Europe/GCC countries in OEM facilities in Europe. Our team is highly skilled, experienced and trained on OEM. The facility is located in Ras Laffan and operational from 2018. We cater to all major off shore and onshore oil and gas operators.

Submersible motor functional test

Submersible pumps have become an indispensable feature of the Qatar oil and gas industry, largely due to the robust performance and reliability. These submersible pumps are used for critical applications such as ballasting, DE ballasting, emergency draining, sea water lift, firefighting tank filling and cooling water.

Due to the criticality of the application where these pumps are used, performance test of the units are highly recommended to maintain high reliability and integrity of the submersible pump.

Functional test of the motor plays vital role in submersible units operating life cycle. Petrotec follows OEM standards for the functional test.

Petrotec follows highest quality standard for the submersible unit after overhaul and assembly, it's imperative that the unit should function as per OEM specified standards before installation and to assure motor electrical integrity.

Why major oil and gas Qatar companies required to conduct Local FAT testing

Petrotec , represents a world leading European manufacturer STAHL crane systems and STAHL STD EX products, Petrotec , are striving to provide customer, with a unique experience and quality assurance system. Through a Rigors FAT process that evaluates that the crane are built and operating in accordance with design specifications. At the worksite, during commissioning /site acceptance proof load test(SAT) at 125% of safe working load(SWL), there are probability of deterioration detected such as; girder deflection which is not with allowable tolerance, and some crane components failure under full load.

Petrotec, to mitigate all above mentioned risks, designed and built a unique FAT (factory acceptance test rig - with capacity up to 60 Ton) and together with STAHL-GERMANY maintained a rigorous FAT procedure. That helps to keep the project on track and within budget. FAT almost always save time and money over fixing issues in the field.

Ocean Team
Total Purity Solutions
A Petrotec Company

Petrotec-Ocean Team Qatar is solving issues related to varnish in critical rotating equipment in different customers, onshore and offshore."

Are you having any issues with varnish potential in your turbo machinery/critical rotating equipment?

Fluitec/Petrotec solutions to mitigate and prevent the Varnish potential are widely used by oil and gas companies in Qatar onshore and offshore.

In the concept of lubrication reliability – process of extending machine life – controlling the contamination in the oil is one of the main actions our clients want to achieve. The soft contamination, also called varnish, is one of the deposits created in lubricating oils that can cause some problems in compressors, turbines and hydraulic systems such as high bearing vibration and temperature, high lube oil temperatures and unexpected shutdowns.
The solution to prevent the possible failures in the machine related with varnish potential is using oil analysis to monitor the contamination and anti-oxidant levels and follow the trend. To analyze the varnish potential, Petrotec performs the MPC test designed to separate oil degradation products and measure their color using the MPC color instrument, following the ASTM D7843. To analyze the anti-oxidants level, performs the RULER test using an instrument, following the ASTM D6971.

Based on current lube oil condition, history of machine, issues reported by customer and planned maintenance activities, together with Fluitec, can provide different solutions to mitigate the varnish, improve lube oil performance and extend its life. No adverse impact on the in-service oil's performance (i.e. air release, foam, demulsibility, rust, etc.) and without stopping the machines. Shutdown times are also reduced when the oil needs to be changed/upgraded.
As Fluitec authorized distributor and stockist for the Qatar market, performs on-line varnish filtration service using latest technology and supply the below different solvents enhancer.

- Vita ESP III - contamination control unit using electrophysical separation process technology, with maximum flexibility to control contaminants in your critical lubrication systems. The VITA ESP III allows you to remove the most damaging types of contaminants in your fluid, such as soft (sludge and varnish) and hard (dirt and wear metals) contaminants
- Boost VR+ - specialized synthetic base oil API group V chemistries and is fully compatible with your oil. Enhances the oil solubility which re-dissolves deposited degradation products back into the oil, as measured by MPC level
- DECON - blend of specialized synthetic API group V chemistries. In addition to having outstanding solubility characteristics, it also has rapid reduction of the oil's varnish potential, as measured by MPC level and particle counts, and excellent oxidation stability and deposit control characteristics

Petrotec Total Purity Solution

OTQ is a leading provider of oil/hot oil flushing /high velocity flushing for turbo machinery, both as a pre-commissioning cleaning activity or as part of reliability improvement requirements. OTQ has a large fleet of specialist flushing equipment and a highly trained flushing team. OTQ is also a leading provider of specialist chemical cleaning services for the offshore oil and gas industry, heat exchanger cleaning, acid injection in water producer wells etc. Over the years, OTQ has become the leading company for confined space entry for vessel cleaning.

Ocean Team
Total Purity Solutions
A Petrotec Company

For best overall performance and a fill-for-life lubrication system, or to get the most out of cleaning your system, we recommend ESP and Boost VR+ / DECON product line:

- Supports our customers' quality and maintenance programs by minimizing your overall costs and waste
- Systematically reduce power-usage and lubricant consumption downward
- Significantly lowering CO2 emissions and reducing wastes
- Minimize oil changes and prolong machine life
- Positive environmental impact to your organization and your organizations sustainability
- Minimize contaminant ingression, removing oil degradation by-products and replenishing sacrificial additive components-while monitoring the health of the fluid

Do you know Qatar is the pioneer of GCC countries applying our different solutions to mitigate and prevent varnish potential - onshore and offshore?

The below recent case studies are some examples of respective applications.

#1

A major offshore oil and gas operator in Qatar uses Boost VR+ solution for varnish mitigation, as preventive maintenance, before upgrade the turbine oil.

Challenge:

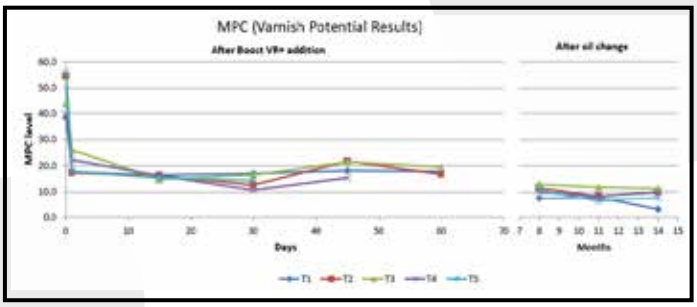
- Oxidation deposits in 5 Solar turbines, 1,500L capacity each
- Avoid spikes in the temperature of the Bearings after oil change and upgrade

Solution:

- Boost VR+ solubility enhancer was added to the lube oil reservoirs to dissolve the varnish, approximately 1-2 months prior to the oil change and upgrade.

Results:

- Clean oil and a varnish-free system before changing the turbine oil. MPC level maintained below the accepted limits (≤15) for more than 1 year after oil has been upgraded



#2

A major oil and gas company in Qatar uses Vita ESP III and Boost VR+ solution for varnish mitigation, as preventive maintenance, before upgrade the compressor oil:

Challenge:

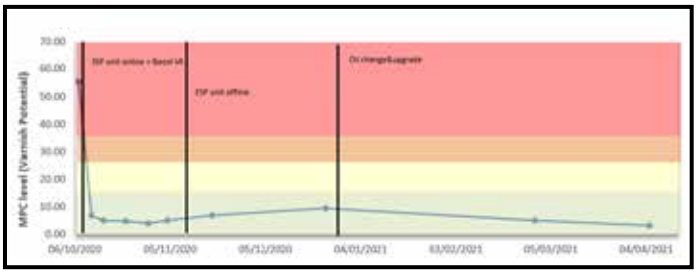
- Oxidation deposits in one compressor, 10,500L capacity

Solution:

- ESP (electrophysical separation process) technology. In addition Boost solubility enhancer was added to the lube oil reservoir to dissolve the varnish approximately 3 months prior to the oil change and upgrade

Results:

- Clean oil and a varnish-free system before changing the compressor oil. MPC level maintained below the accepted limits (≤15) for more than 3 months after oil be upgraded



#3

A major chemical company in Qatar uses ESP Vita III and DECON solution for solving high bearing temperatures and Varnish Mitigation.

Challenge:

- Oxidation deposits in one compressor, 16,000L capacity
- High bearing temperatures
- Extend the life of the oil for at least one more year

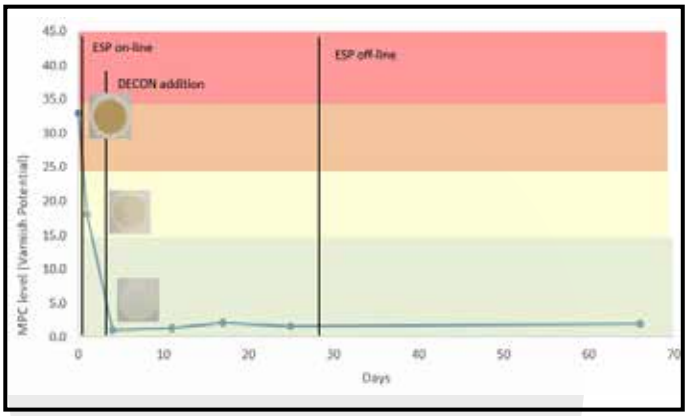
Ocean Team
Total Purity Solutions
A Petrotec Company

Solution:

- ESP (Electrophysical Separation Process) technology. In addition DECON solubility enhancer was added to the lube oil reservoir to dissolve the existent varnish, prevent future formation and control the deposits

Results:

- Clean oil (MPC < 15) and bearing temperatures have been maintained stable allowing the system to operate without any possibility of bearing failure in the following months after disconnect the ESP technology



Lubrication and Reliability Virtual Summit 2021!

Along with 50+ experts in their respective fields, Petrotec group had the opportunity to join them on the LRVS2021 event with the topic "QATAR - The Pioneer of GCC Countries applying DECON Solvancer®Technology onshore and offshore. It took place on last 14-15th September and brought together all the major global stakeholders including OEMs, oil producers, service providers, and recognized industry influencers such as Siemens, ExxonMobil, Solar turbines, chevron air liquide, Framo, Linde and more to not only provide valuable, actionable content, but to also identify, plan and put in to action the future needs of the lubricant and hydraulic market to guarantee its success and develop the next generation lubrication technology.

Q-FAB

Q-Fab: Always the leader in construction machines industry in Qatar

Major fleet of Wirtgen Group machines sold by Qfab at HIA Expansion Project, Qatar

Hamad International Airport announced the second expansion phase of the airport. It will be done in two phases (Phase A and Phase B).Construction of Phase A is ongoing and it will help to increase the airport's capacity up to more than 53 million passengers annually by 2022. It will be further extended up to more than 60 million passengers annually after 2022 which will be achieved by phase B construction.

The expansion plans also includes a spectacular 10,000m² indoor tropical garden in a central concourse with 268m² water feature, 11,720m² of landscaped retail and food and beverage (F&B) space which will be the focal point of the expansion project and will enhance the multi-dimensional offerings of the five-star airport by integrating a world class art collection and a refreshing environment of lush greenery with contemporary retail and dining concepts, among other leisure attractions and facilities.

For the execution of the Phase A, MATAR, the Qatar-based company for airport operation and management awarded 5 contracts listed as below to the contracting companies and multiple joint ventures.

- Western taxiway and stand development works contract, package-0012. The project is infrastructure and utility-focused and will increase the operational capacity of HIA, as well as delivering an additional 39 aircraft stands.

Q-FAB

• The passenger terminal expansion works, central concourse building and early works contract, package-0013, The contract includes the delivery of an additional 140,000m² passenger terminal building and a new transfer area, which will help shorten passengers' connection time and, ultimately, improve their overall transfer experience at HIA

• Remote transfer baggage facility handling systems (RTBF) and Building projects, (package-0014 and package-0015). It involves the construction of the facility, and the supply and installation of the baggage handling system into the remote transfer baggage bacility building

• Western fuel farm and midfield Fuel farm expansion works contract, package-0017. The project will fulfil the need of developing supporting facilities for the growing needs of HIA's operations due to the new developments.

Q-Fab is proud to contribute to the development of Qatar with Wirtgen Group. Q-Fab successfully sold 35 units of Wirtgen group machines such as Vogele asphalt pavers, Hamm Roller, Wirtgen Milling machines/Slipform Paver/Texture curing machines, and Benninghoven retrofits for this project.

Also it is proud share that 11 milling machines of Wirtgen, sold by Q-Fab were working day and night on this project which is a 100% machine share at the project.

For more details about this product, please contact:
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AL-MAHHAR Kuwait المحار
Light and Heavy Construction Equipment

Al-Mahhar Seminar

"When life gives you lemons, make lemonade" we have all heard of this phrase before. Despite the hard challenges of Covid-19, Al-Mahhar used a Wirtgen engineer's presence very well, by organising on the spot training and virtual seminars for PACT and the top consultants for road works.

Training was provided for Vogele Pavers and Wirtgen Milling machine called as "Fit to Work", where in we offered training on fitness and condition check of paving equipment before starting to pave. Training was very well received, and Al - Mahhar gave certificates of participation to all attendees.

Also, a virtual seminar was arranged with support of Samar Pal Bais, General Manger, Al-Mahhar Kuwait and Mr. Norbert Bail, Area Sales Manager, Wirtgen to demonstrate recycling technology in Kuwait. Engineers of PACT along with Ms. Suha. Director, PACT Kuwait was an attendee, and the technology was well received by them. Hope we will see recycling activities in Kuwait soon.

Koop successfully completed few dewatering projects located in Naval base

In the coming years Qatar will see significant growth in the importation of raw materials and goods, underscoring the need for a new advanced commercial port facility. The new port, strategically located outside the capital city of Doha. The master planning for the new port is closely aligned with the Qatar national vision 2030.

Koop has recently successfully completed a couple of projects in the Naval base (Mesaieed area). Both the projects consist of number of buildings, sewage treatment plant and manholes with excavation depth varies between 4m to 14m bgl. All these excavation were carried out in open cut method without any water tight cut off wall. Which makes designing and executing of the dewatering job much more crucial, critical and challenging considering the loose and porous lithological units (top layer of sand and calcarenite up to 6m bgl followed by thick bedded limestone unit ~20m bgl).

Koop installed 50nos electrical submersible bore hole pumps into deepwells, over 100nos of electrical submersible drainage dumps and diesel centrifugal pumps for sump pump methodology pumping over total 4,500m³/hr from these projects. Koop installed more than 6,000m of discharge network and deployed multiple diesel booster pumps to pump the water to the intermediate disposal lagoon. From the Lagoon, final disposal to the sea with another set of discharge network and diesel booster pumps.

Currently Koop carrying dewatering activities in several main projects, including prestigious projects like: HIA Expansion project, Central Doha and Corniche beautification project, FRP-5, Construction of Sabah Al- Ahmad corridor, R and I in Al Mashaf, construction of FS and SW network for various catchment within Doha, Gewan Island infrastructure project in pearl etc.

We are looking forward to new full scale projects and challenges in the year ahead into the third quarter of 2021, as multiple upcoming infrastructure development projects in north of Doha (Umm Salal, Simaisma) and Ras Laffan north field expansion projects.

For more details, please contact:

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About Koop

Koop Watermanagement Middle East W.L.L. is a Joint Venture established between Koop Watermanagement B.V. (The Netherlands) and Qatar Welding and Fabrication Supplies (Q-Fab). Koop Watermanagement is a contractor and consultant, specialized in tailor-made solutions for various kinds of dewatering systems. Started in The Netherlands in 1969, Koop has grown to be one of Europe's largest dewatering companies. Koop has several branch offices in the Netherlands, Germany and Belgium, and operates in countries all over Europe.

Solarca's committment to shutdown schedules

- Solarca Qatar through a process of competitive bidding was recently awarded a major shutdown for one of the prestigious oil and gas clients Solarca Qatar, even through the tough times of the pandemic, still upheld our motto of delivering the best in quality of service to our clients, meanwhile having the most competitive bid in the market. Keeping in mind the tight schedule of the shutdown, Solarca had cleaned a total of 11 heat transfer process exchangers, performed the degreasing of the amine systems, as well as desludging of a vessel. The total cleaning operations were completed, 3 days ahead of the schedule allotted for the activity.
- Through Solarca Qatar, excellent customer relations, safe working practices and a dedicated highly specialised crew, the shutdown was delivered with excellent results, adhering to the tight schedule of the shutdown.
- This commitment to customer satisfaction, has enabled Solarca Qatar to be the preferred service provider for chemical cleaning activities

For more details about this service, please contact:
Stefan Shelley, Sales Engineer
T: (+974) 4490 4932/M: (+974) 3030 4391
Email: stefan.shelley@solarca.com

About Solarca Qatar

Solarca Qatar was formed in 2009, a joint venture between Petrotec and Grupo Solarca. Solarca has its roots deeply embedded in the field of chemical cleaning and air and steam blowing, and possesses the expertise of Grupo Solarca in terms of chemical cleaning and air and steam blowing.

Q-Cal successfully completes calibration of Two 36 inch Pipe Provers, onboard FSOs (Floating storage and soading) in Qatar offshore fields

All bi-directional provers require periodic calibration to determine their 'base volume' (or volumes in case of multiple pairs of detector switches).
Client preferred small volume prover/master meter method for calibration of these 36 inch Pipe Provers, considering the larger round trip volumes. Q-cal's new 12 inch compact prover was utilized, together with a Daniel 3 inch turbine meter as reference meter. All switching and computations were navigated using the latest emerson floboss 600+ computer.

A water draw calibration of the compact prover was carried out onshore to ensure base volume, prior to mobilization. This was followed by pre and post water draw calibrations onboard each FSO. This repeatability is critical in the overall calibration process.

Prover volume:

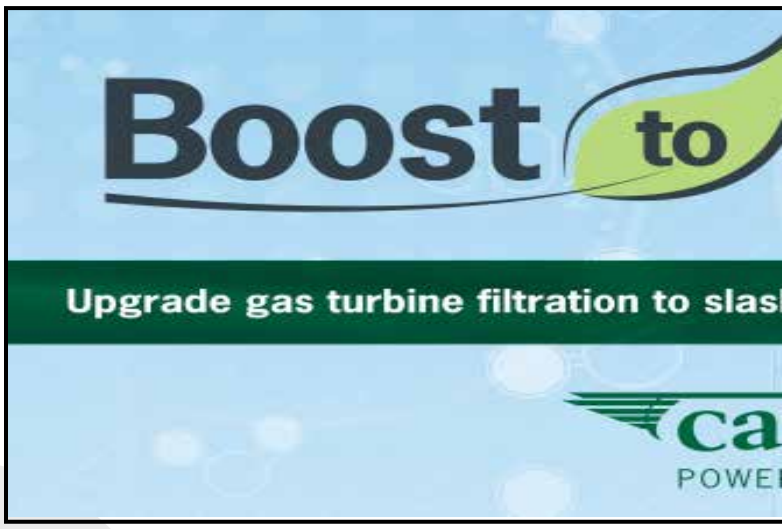
For 36'' bidirectional Pipe provers, requirement was to prove four volumes of approximately 15,000 US Liters each, between two pairs of detector switches. Five consecutive runs for each volume, with a tight repeatability limit of 0.02%.

Advantages over water draw calibration method:

In general, when conducting a calibration on large prover with large ambient temperature swings the master meter method is the most appropriate and cost effective method for calibration.
Calibration can be carried out on the actual process fluid, which will further reduce uncertainties of measurement.

EMISSION R

Qatar Petroleum has embarked on an ambitious strategy to reduce greenhouse gas emissions by 2030 with significant targets for carbon capture and storage, reduction in emission intensity at LNG and upstream facilities as well as flare intensity.
These initiatives are in addition to Qatar Petroleum being a signatory to the oil and gas methane partnership (OGMP) which provides the pathway to consistently measure and reduce methane emissions. OEMs across the oil and gas spectrum are working on solutions to support these objectives. We at Petrotec are pleased to present some innovations from our OEMs in this article to support QP achieve its emission reduction goals.



Cutting the carbon cost with improved air inlet systems for gas turbines:

The push for going green:
As the world becomes environmentally conscious, the power generation and oil and gas (industries have seen mounting pressure to find greener solutions to cut their carbon emissions, reduce operational costs and become more efficient.

Cutting the carbon:
One of the easiest and most cost-effective ways to cut CO^2 emissions is by using more efficient air intake filter solutions. Better solutions designed to protect the turbine under all weather conditions will reduce fouling and corrosion, leading to increased efficiencies, thus cutting the 'CO^2 intensity' of the fuel.
Fouled engines have a higher heat rate than clean engines, owing to the inefficiencies caused from fouling. With less power being generated, it becomes necessary to meet demand by either increasing the fuel consumption in part load applications, or by finding additional sources of energy in base load applications, such as operating more turbines directly or indirectly. Both cases result in increased fuel costs, increased carbon emissions, and a high CO^2 intensity.

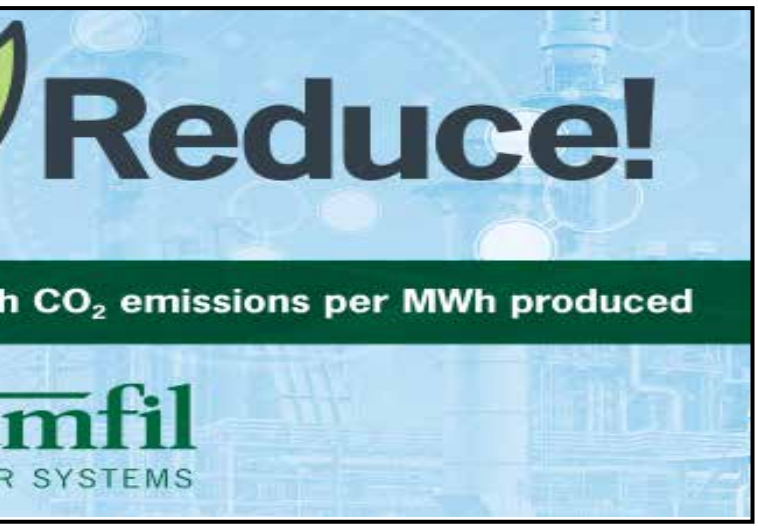
Why choose better air inlet systems?
Most methods of cutting CO^2 including carbon scrubbing and post-combustion carbon capture require additional infrastructure to be built, leading to higher maintenance and operational costs.

Since air filters are already required for the nominal operation of gas turbines, upgrading the air inlet systems generally involves the usage of pre-existing infrastructure or an upgrade of the current system. Operational expenses and carbon taxes are greatly reduced, whilst negative fouling effects such as cooling-passage blockage, corrosion and fusion are minimized. This extends component life and increases availability and reliability by reducing the frequency of offline and online washes.
In short, not only do improved air inlet systems reduce the CO^2 intensity of your operations, but they protect and improve engine performance. It is cost-effective, easy and one of the most accessible solutions to cut the CO^2 intensity of your gas turbines.

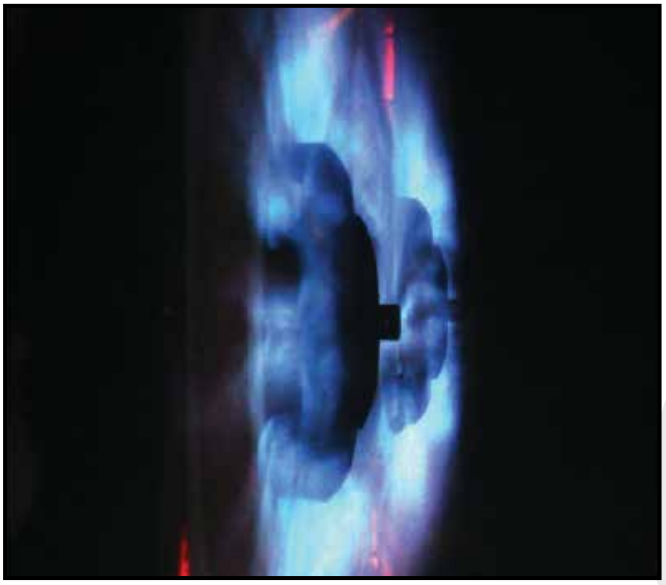
WALFIRE™ Radiant wall burner (the highest Hydrogen compatibility available from a radiant wall burner)

The risk of flashbacks has increased considerably in recent years, causing higher maintenance costs and worse—complete system replacements.
The problem is that many crackers have changed their feedstock from a naphtha to gas. This causes a dramatic increase of hydrogen in the fuel gas to the burners. Unfortunately, the premix concept for most radiant wall burners reaches its operational limit here, allowing these high hydrogen levels to increase the risk of flashback and your exposure to unexpected expenses.

EDUCTION



WALFIRE is the solution. Especially designed to work with up to 100% hydrogen and no risk of flashback, WALFIRE delivers the lowest possible NOx emissions in these applications. In addition, WALFIRE'S single-point fuel injection and all stainless steel construction keeps maintenance requirements low.



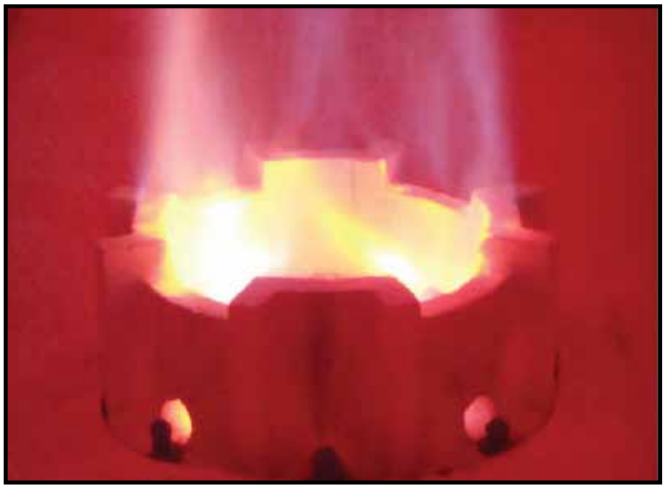
The WALFIRE burner draws upon decades of radiant wall burner experience in reforming, olefins and EDC furnaces across the globe to deliver superior performance and benefits.

• 100% No-flashback guarantee, due to the diffusion concept.
• The lowest possible NOx emissions for such applications.
• INFURNOx™ technology.
• Minimal maintenance, stainless steel design.

COOLstar® burner - ultra-low NOx performance

The COOLstar® burner is an advanced solution for extremely compact, ultra-low NOx gas firing applications. Thousands of COOLstar® burners are in service due to its proven results.

The COOLstar® burner applies John Zink's proprietary flue-gas entrainment and mixing strategy using the energy of incoming fuel and air streams. This results in stable, compact flames and NOx guarantees as low as 15 ppmvd (31 mg/Nm3). It requires minimal maintenance and operates with a wide range of fuels, setting a high standard for economical, ultra-low NOx combustion.



Burner advantages and features

Performance

• **Emissions:**
– Guaranteed low NOx 15 ppmvd (31 mg/Nm³).
– Can reduce NOx emissions further
– Can be designed for reduced CO emissions during colder furnace operation
• **Reliability and efficiency:**
– Flames as short as 1.6 ft/MMBtu to minimize impingement.
– Options for reduced flame length
– Stable over a wide range of fuels and furnace conditions
– Pilot not required for burner stability
• **High turndown:**
– 5:1 turndown and higher

Design:

• **Heat release:**
– Typical heat release from 1.7 to 21 MMBTU/hr with natural draft
– Higher heat release available
• **Compact size:**
– Fits with little to no modifications

Villa Scambiatori S.r.l - "flexible to be reliable"

Villa Scambiatori S.r.l founded in 1968 is one of the best in class Italian manufacturers of shell and tube heat exchangers for various industries like refining, chemical, petrochemical, offshore and naval industry. Villa Scambiatori is an ISO -9001:2015 certified manufacturer capable of delivering equipment as per several international quality control standards. Their wide range of products together with flexibility and reliability as well as technical expertise, makes Villa Scambiatori S.r.l., the right solution to customer's needs.

Villa Scambiatori is well equipped to deliver equipment in all kind of materials starting from carbon steel and stainless steel to the most exotic ferritic and austenitic material. They are experts in duplex, Superduplex, Copper and Nickel Alloys and titanium heat exchangers. These heat exchangers can also be customized as per client's specifications and data.

With more than 45,000 installations around the world, we are pleased to announce that Villa Scambiatori S.r.l is currently working on a duplex heat Exchanger with one of our prestigious client in Qatar.

Villa Scambiatori has recently been awarded a package of 12 solid titanium grade II Shell and Tube heat exchangers with titanium fine finned tubes for a prestigious client in Mexico.

Villa Scambiatori in addition to Shell and Tube Heat Exchangers are experts in Breech-Lock heat exchangers, waste heat boiler and sulphur condensers, columns and reactors.

Flexibility in every respect is what makes Villa Scambiatori different. They offer customized products that meets and exceeds the client's expectations along with timely delivery.

For more details about this product, please contact: Natasha Vincent, Projects Engineer
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Knowsley turbinator foam mixing technology

WATER DRIVEN

The Turbinator is a water driven positive displacement foam proportioning pump driven by a special volumetric water motor directly coupled to a precision gear pump. This unique design ensures the correct ratio of firewater to foam concentrate is mixed over the full operating range, making the Turbinator the perfect proportioning technology for systems with different flows such as multi-legged deluge systems, sprinkler systems and mobile equipment.

BUILT TO LAST

The flexible, abrasion resistant paddle material utilised ensures that the usual contamination present in fire water causes no damage to the unit. Similarly, overspeed of up to 120% of the nominal flow which can occur during automatically controlled activation of large systems is easily handled by the Turbinator.

Also resisting dry running in accordance with NFPA20, the Turbinator will provide a lifetime of trouble free foam proportioning. It does not require setting up or on-site adjustment as the proportioning rate is achieved at any flow rate and pressure within the operating range. The pump requires just 3 connections: fire water inlet, foam concentrate inlet and foam solution outlet. The Turbinator can be installed directly into vertical or horizontal piping systems – all without the need for external power supply. The very strong suction-lift capability created in the foam inlet piping allows greater flexibility of installation, allowing the foam storage tank to be located some distance away from the Turbinator.

RANGE & PERFORMANCE

The Turbinator is available in 3 sizes ranging from 500 l/min to 12,000 l/min and proportioning of 1% and 3%. Each Turbinator unit is 100% tested on a high flow test rig at the manufacturing facilities in Manchester, England prior to shipping – ensuring perfect functionality at all times.

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Rotating Equipment

VOITH Turbo

VOITH Turbo BHS is the turbomachinery division of Voith Group, a global technology company with a wide range of products and services. Their state-of-the-art turbo gear units and components such as Turbo parallel shaft gear units; epicyclic gear units; rotor turning gears; can be found in a wide variety of industries and are installed where energy can be converted into controlled motion.

In Qatar its is no different, Voith Turbo has a strong presence in the region, especially in the oil and gas, petrochemical and power and desalination markets. It is challenging to find a site where Voith does not have any units installed. Why? Because customers have become more demanding for high quality and reliable equipment. They seek to increase the availability of the entire system while avoiding the costs and loss of revenue that come with unplanned downtime.

Products

Epicyclic gear

Voith Turbo BHS is also known as one of the most experienced manufacturer of epicyclic gear units according with Stoeckicht principle (this principle is characterized by a “floating” sun wheel and annulus gear). They are used between all typical main engines and output machines within turbo trains. Their gear units are constructed for power up to 45 MW and speeds of up to 80,000 rpm and torques of over 550 kNm.

With single-stage designs ratios up to 12:1 and with two-stage ratios up to 80:1 are achieved. With their design, the unsupported sun wheel plus the unsupported radially elastic annulus halves effect an equal load distribution on the planets and this in turn produces less wear and tear on the components. And the results? A high power density with low space requirement, combined with lower weight.

Voith Turbo BHS parallel shaft gear

Voith Turbo BHS parallel shaft gears units are specially designed for power up to 85 MW and speeds of up to 60,000 rpm. They are designed for a low oil consumption, reduced operating costs, long service life and high efficiency. These units have the capacity to transmit very high powers and speeds with high efficiency, and the basis for this capacity is the ability of an optimized gear design in accordance with decades of experience, all current technical guidelines, plus specialized in-house calculations.

Rotor turning gear

Large gas turbines, steam turbines and compressors are equipped with a turning gear assembly to slowly rotate the rotor during periods of cooling down after a shutdown, while warming during startup, and during periods when the unit is off-line and on standby. The turning gear will help the rotor remain dimensionally stable and will also support breakaway, startup and precise positioning of shaft trains. Voith Turbo BHS rotor turning gears are constructed of simple and standardized components. The speed of rotor turning gears range from 0.2 to 400 rpm, and the break-away torque from 300 to 100,000 Nm. The equipment is also available with various explosion protection types and automated operating control.

Diaphragm couplings

Diaphragm couplings are designed for the connection of high-speed shafts and to compensate the axial, radial and angular offset of the two coupled shafts. Voith Turbo BHS Diaphragm Couplings covers a performance range between 100 and 70 000 kW, are designed for torques up to 1,500,000 Nm and speeds up to approx. 80,000 rpm.

Their high performance couplings meet the requirements of API 671 and ISO 10441, and generally operate free of lubrication, wear and maintenance. During their entire operating life, the diaphragm elements are expected to retain their elastic properties.

Voith service

With regular maintenance, Voith Turbo BHS gear units should run without problems for 250,000 hours or longer. And to support customers to achieve this milestone, Voith offers an attractive service and consulting package over the service life of the product, ensuring ongoing and consistently high productivity for the plant operator. Voith will offer the right service for the entire product lifecycle, from planning and commissioning, to maintenance, modernization and replacement. For example, in case a parallel shaft gearbox needs inspection at customers site, Voith highly trained and experienced service team will be available to deploy to their site. After the inspection is concluded, Voith will issue a fully detailed service report with all findings, recommended spare parts and possible upgrades to increase this machine efficiency and to meet customers' requirements. In the event that a deeper evaluation of Voith Turbo BHS gears and components is required, Voith has dedicated service centers around the world to support customers.

Petrotec is very proud of its long-standing partnership with Voith Turbo BHS and looks forward to support all operators in their business.

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Petrotec/Flowserve dry gas seal QRC (Quick response centre)

Petrotec is the authorized distributor of Flowserve Seals in Qatar since 2003, providing customers with a full range of products and aftermarket services. Dry gas seals are an integral part of compressors used in the oil, gas and petrochemical industries. Petrotec/ Flowserve dry gas seal repair and testing facility in Qatar has been established as a part of strengthening localisation and saving substantial foreign exchange for the country. This facility which was established in 2019 expands on Petrotec's existing wet seal repair and testing facility and brings local compressor seal commissioning, inspection and repair capabilities to Qatar. Oil and gas companies in Qatar has now access to faster seal delivery, local inventory, on-site inspection and testing services, and immediate repair capabilities. Previously companies had to send compressor seals outside Qatar for testing and servicing, which led to increased downtime, additional inventory and shipping expenses. Flowserve and Petrotec will now be able to bring these services directly to customers' locations, which will reduce turnaround time. This facility has a dynamic compressor gas seal tester capable of meeting the highest standards of the compressor seals installed in the region.

Local capabilities of dry gas facility in Qatar:

- Inspection of repair seals, failure analysis (if required with customer witnessing), RCA
- Vendor-X-repairs –repair and testing of different brand seals
- Vendor stocking program - inventory management of customer seals (stocking and seal requalification and extended warranty)
- Repair of dry gas seals seals
- Assembly of seals
- Dynamic test run of seals
- Training to end-users
- Field service assistance

During the inauguration of this facility P.K. Viswanath, General Manager - sales at Petrotec said: *"I would specifically like to thank Qatar Shell. It was their initiative much before the localisation program (Tawteen) started. Qatar Shell had the vision to look at localising activities in Qatar and I would like to thank Qatar Shell for giving Petrotec the opportunity to localise this activity."*

From Flowserve side: Tom Diez, Vice president global distribution at Flowserve said: *"Petrotec is a pioneer in the relationship between Flowserve and its distributors because Petrotec had the first wet seals repair and testing facility for a third party company outside of Flowserve's extensive network of facilities. Once again, this new facility is the first time Flowserve has ever partnered with a distribution channel for a dry gas seal repair facility in the world."*

Fred Meeke, Vice President of Sales EMEA at Flowserve added: *"I would like to thank Petrotec for supporting Flowserve in additional things such as training in addition to their commitment to "Internet of Things" and our wireless data capture system. These are signs of a fantastic and progressive relationship that we have with Petrotec".*

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Rotork Retrofit project

For a top oil and gas customer in Qatar ,Petrotec 's field instrumention along with STC-SS department took the challenge of completing the retrofit of 44 Electric actuators/gearboxes in a time bound critical shutdown held in Feb/March, 2021.

The existing actuators installed at site were 25-30 years old and the customer was facing issues on spares availability and the performance of the actuators was deteriorating. There were frequent issues with the existing actuators getting jammed. As the actuators were very old, the customer was also not aware of the existing actuator specifications which were required for retrofit. The existing actuators were installed on valves ranging from 2'' class 600 to 34'' class 900 Ball valves.

Petrotec with the help of Rotork were able to size the actuators making sure that there won't be any issue on driving the existing valves.

Rotork IQ3 with IW gearboxes and IQT3 actuators were ordered to be fitted onto the valves. These reliable and robust actuators provided an innovative electric flow solution, with an intuitive user interface (HMI), advanced dual-stacked display, absolute position sensor, ATEX rated IIC and detailed data logging.

Even during the pandemic period, Petrotec as a team were able to successfully install and commission the 44 actuators ahead of the shutdown closure.

The local service capability helped in adding the in country value (ICV) of Petrotec.

Petrotec wins contract to provide Expansion Joints for Common Seawater Cooling Facility

general rubber
From the Simple to the Simply Amazing

Challenge

Provide Expansion Joints design that would allow easy access to piping and equipment.

Solution

Petrotec represents General Rubber Corporation (GRC) in Qatar. GRC's self-retracting dismantling Expansion Joints not only allowed easy access to piping and equipment, but also eliminated the need for complex anchoring systems and guides. It allows end user to utilize the latest technology with most economical solution for the piping process scheme.

With over 60 years of experience providing Expansion Joints to facilities globally, GRC's unique dismantling joint allowed end user to meet their requirements in a restrained configuration. The magnitude and complexity of the job required the highest level of quality and design assurance possible. GRC and Petrotec worked with the design engineers and ultimately provided joints for all phases of the project.

GRC continues to develop new, innovative Expansion Joints to meet the changing needs of our customers, even on high profile projects.

General Rubber Corporation prides itself on providing powerful solutions for difficult design problems, allowing our expansion joint designs to range from the simple to the simply amazing.

Petrotec's Process and chemicals team would be glad to support you for innovative and reliable solutions on your expansion joint requirements.

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Petrotec signs a partnership agreement with Intervention Rentals

Petrotec is pleased to announce its recent partnership with Intervention Rentals (UK) who are a premier independent supplier of drilling and well service related rental equipment. By this agreement Petrotec holds a stock of Flowline equipment and high pressure Hoses which are available for rental from Petrotec Service and technology centre in Ras Laffan. The range of equipment includes but not limited to the following:

- Plug valves
- Swivel joints
- Check valves
- Adjustable Chokes
- Straights
- Pup joints
- Tee pieces
- 90 deg. Elbows
- Cross overs
- Filter subs
- Bull plugs
- Black Eagle hoses
- Flowmeters
- MCII Analyzers

Abdelhak Merah, Petrotec Sales Manager – Oilfield services said: *"This partnership allows us to expand our rental portfolio for the oil and gas upstream segment as we have a large experience in the certification and rental of Cargo Carrying Units (CCUs). Our existing clients such as Drilling contractors and Well service companies can use our large inventory of Flowline equipment and Black Eagle hoses on rental basis."*

Phil Scott, Intervention Rentals Managing Director said: *"With Petrotec as our trusted partner we have entered the Qatar market which allows Intervention Rentals to build on its success in the North Sea. This partnership will enable us to support the Flowline market and introduce other technologies as we grow together. We couldn't have selected a better partner and we are looking forward to further developing our business."*

Petrotec's Valve department has a large experience in the repair and certification of the Flowline equipment. *"Our clients can now borrow replacement equipment while we take care of the repair and recertification of their own equipment"*, Abdelhak added.

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RANOLD and INNOWELL SOLUTIONS

Innowell solutions has developed density activated recovery (DAR) technology which represents the next generation inflow control technology. DAR technology is unique in that it utilizes density contrasts between fluids to autonomously discriminate desired and undesired fluids. Its distinctive and game-changing capabilities that aspire to make future field developments more sustainable in a low-carbon environment, accelerated production, improved sweep efficiency and reduced cost.

Ranold, who is the parent company of Innowell Solutions, has built a unique team of experts within fluid flow modelling and simulation services. With their academic insight and industrial experience, they deliver operational results with clear recommendation and great value for clients. Numerous services offered by Ranold is as listed below.

- Internal fluid flow
- External forces
- Blow out modelling
- Relief well kill modelling
- Capping, gas dispersion modelling

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IMPULSE DOWNHOLE TOOL

Impulse Downhole tool is focused on improving the horizontal drilling process. Various services offered by Impulse downhole tool are stipulated below.

- Friction reduction (Drill String Dynamics) – vibra tion tools to reduce the amount of friction encoun tered while drilling
- Drill string design – a new style of rigid drill pipe that will increase the drill pipe rigidity
- Mitigating Drilling Issues –reducing reactive torque, minimize cutter impact damage on drill bits
- Completion operations – friction reducing tool for well intervention operations
- Hex Drive™ – mud motor that can handle higher torque and higher thrust load

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Northside tools and technology

North Side established in 2011 is a manufacturer of production logging tools and modules, downhole gauges with a specific focus on well-reservoir performance evaluation service and MPLT in artificially lifted wells using Flow Jet Technology.

The various services offered by North Side are as listed below:

- Spinnerless production profiling in horizontal oil producers and injection profiling
- Multi Barrier corrosion logging
- Leak detection by spectral noise logging tool.
- MPLT in artificially lifted wells by flow Jet
- DST and PVT in Non-Self-flowing wells by flow jet
- Conventional production logging survey.
- Array CAT, TAT, RAT Production logging in horizontal wells
- Well-reservoir performance evaluation service

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CANNSEAL – an Interwell Company

Petrotec drilling department has been working with Interwell for the last 15 years and CannSeal is the new acquisition by Interwell.

Interwell is a leading provider of wellbore technology with products qualified to the highest standards for well barrier and well integrity needs for the oil and gas industry.

Interwell is a manufacturer of plugs, packers, and straddle solutions for challenging well applications within the area of high temperatures, high pressure, and high expansion. Interwell's technology is designed to be used as barriers or isolation in the reservoir during the production phase – mainly inside tubing and casing.
Since 2007, CannSeal's team of scientists, engineers and innovators have developed its epoxy-based sealing solutions and patented downhole delivery tool to accurately plug both vertical and horizontal wells.
Interwell's knowledge of the technology, industry and their strong organization, will help strengthen how the CannSeal technology can perform, as well as supporting the product and its delivery to global markets.

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Petrotec's participation in the annual flu vaccination campaign

Last year, Petrotec ran a Flu Vaccine campaign in coordination with Hamad Medical Corporation (HMC). We had HMC nurses come to two of our office locations, Jaidah Square and Ras Laffan, to administer the flu vaccine to over 350 of our employees. This year, The Ministry of Public Health, Hamad Medical Corporation and Primary Health Care Corporation in Qatar have announced that the annual seasonal influenza vaccination campaign for 2021 will begin in September. The health sector has launched the campaign early this year as experts warn that the flu season may start earlier than usual this year. With this in mind, Petrotec plans to run a similar campaign to what we ran last year, in the coming months.

We would like to give our employees the choice to conveniently have their flu vaccination done at work, in a sterile set up. We will convert one of our large training rooms into a vaccination station for those who wish to get their Flu vaccine. We encourage all our staff to get their vaccination as soon as possible to protect themselves against the annual seasonal flu.

Samitha Thamara

Senior Administrator

I am a very lucky individual who has received the opportunity to work at a company like PETROTEC. Being a company with over 30 years of experience, the best thing I value in this company is the multi-ethnic environment. I started my adventure at PETROTEC in 2015 and ever since then, I have encountered new talent and new strategic approaches that has challenged me to grow my knowledge for both work and in my personal life. Although it was a challenge initially to adapt to the multi-cultural environment, I have found it extremely helpful to think out of the known boundaries and go beyond my comfort zone. Currently I hold the title of Senior Administrator for Procurement and Sales for two of our own subsidiaries, QFAB and KOOP. It is a pleasure working with the guidance of our talented management team. The synergy and teamwork are the key to our success. PETROTEC puts their employees first, taking all aspects of our lives into consideration. This, for me, is something I value most here. I feel extremely proud to be a part of this group and wish PETROTEC success in all future endeavors.

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About Petrotec

Established in 1989, Petrotec is one of the largest providers of products and services to the energy industry in Qatar. With approximately 600 employees representing 31 nationalities, the company maximises every opportunity to promote its activities in the fastest-growing energy sector in the Middle East.

Petrotec represents a key selection of world leading manufacturers and service companies. Our clients in Qatar are provided with comprehensive specialised engineering support from our local team to supplement and enhance the links with our suppliers. This close support keeps both our partners and Petrotec ahead of the competition.

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Petrotec بترونك

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