

rotalk

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Established Leaders in Actuation Technology

Rotork controls the flow at Thames Water's flagship project



Rotork IQ intelligent electric valve actuators are installed throughout the advanced new Reading Sewage Treatment Works, described by Terry Bane, Project Director at Thames Water as "one of Thames Water's flagship projects, where some of the most innovative technology has been used to design and build the site."

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First Column

A new year, a new look

This year we are celebrating 10 years of Rotalk, in it's present form. To tie in with this the publishing team have come up with a new and fresher look, which we hope you will appreciate and enjoy reading.



The re-design of the magazine has given us the opportunity to re-emphasise our commitment to giving greater coverage to all the new companies and products that have become part of the Rotork family in recent years. As Rotork grows the magazine will grow to support and promote these additions.

We in the editorial team feel very strongly about Rotalk being customer focused. As such our aim is to publish a variety of articles focussed on specific products and applications from customers' plants, including some high profile success stories.

I would like to take this opportunity to thank our many readers and Rotork employees for their support of the magazine over the years. I would also like to appeal to you to keep feeding back to the editorial team (see contacts below) more of your interesting and colourful stories so that we can maintain Rotalk as the interesting and informative magazine that we are committed to producing.

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United Utilities trusts **Rotork** to keep its valve actuators running reliably

United Utilities, operators of one of the largest water and sewage treatment networks in the UK, has awarded a contract for the overhaul and maintenance of thousands of electrically operated valve actuators and associated equipment to Rotork subsidiary company Exeeco.

Exeeco is responsible for the actuation service and repair activities in an area of north west England with a population of seven million, served by more than 700 water and sewage treatment plants and 140,000 kilometres of pipework and sewers.

Exeeco's responsibilities include the maintenance and repair of all actuator types, whether electric, hydraulic or pneumatic, on a 24 hour-a-day call out basis. Services are performed by a fully trained specialist actuator workforce and

supported by large spares stockholdings, strategically held at Exeeco's head office and workshops in Leeds.

The contract will run for an initial period of three years with the option to continue for a further two. Ian Elliott, Exeeco sales director, explains: "This prestigious contract, awarded following months of detailed discussions, compliments work that we already perform for other utility companies. We are looking forward to meeting United Utilities' requirements on this important task."



LNG terminal is all Rotork



Excellent team work by Rotork offices in France, Italy and Spain has been rewarded by Rotork's selection as the supplier of all actuation packages for the Guangdong LNG (Liquefied Natural Gas) Terminal at Chengtuo Jiao on Dapeng Bay, China.

The project involves the construction of China's first LNG terminal and associated high pressure pipelines to supply Guangdong Province with 4 billion cubic metres of natural gas annually. Rotork's contract is with the STTS Group, a French/Italian joint venture comprising Siapem, Techigaz and engineering companies Tecnimont and Sofregaz, who have a \$240 million engineering, procurement and construction turnkey contract for the project.

Rotork electric and pneumatic actuators have been ordered to operate mainly cryogenic ball and butterfly valves from valvemakers Orton and TRP-Perar in Italy and Poyam in Spain.

Fluid System "showcase" at Russian refinery

Rotork Fluid System has been actively involved in the modernisation of the Ryazan oil refinery for the past four years, supplying a "showcase" of pneumatic products, encompassing SP, CP, P and GP series.

The multi-million dollar contract to modernise the Tyumen Oil Company's oil refinery at Ryazan was awarded to ABB Lummus at Houston in 2000. The project involved the building of VGO & hydrogen, amine and sour water, alkylation and isomerisation units in order to increase the

production of high-octane petrol and reduce the emissions from transportation fuels.

Rotork's distributor, Puffer Sweiven has supplied Rotork actuated and packaged valves in a variety of types and sizes from different manufacturers throughout the project. Jim Gedeon from Puffer Sweiven is enthusiastic about the performance from the two companies. He says: "As a result of the persistence of Rotork and Puffer Sweiven, all actuation purchased by ABB Lummus Houston on the Ryazan modernisation project is Rotork."



Contract News

Emergency Shutdown in Trinidad

Vac Systems recently used a Fluid System actuator to complete a demanding project for the BHP Billiton Angostura Field Development project in Trinidad. The customer required an actuated 10 inch x 8 inch Class 1500 fire safe ball valve with a failsafe closing time of less than 45 seconds – and delivery was required within only four weeks.

Vac Systems designed the package based around a Rotork spring return GP pneumatic actuator equipped with Versa solenoids, Westlock limit switches, a quick exhaust system and stainless steel (317) tubing.

Tested closing time proved to be 38 seconds and delivery was achieved on time, completing a highly satisfactory solution to the customer's ESD (emergency shutdown) application.



Contract Briefs – Fluid System

Rotork Fluid System reports the sale of large quantities of CP range compact pneumatic actuators – launched in 2003 – to projects in the Persian Gulf.



More than 100 CPs are being supplied, together with 28 larger GP range pneumatic actuators, to operate Valvitalia ball valves in sizes ranging from 2 inch to 30 inch for four compressor stations on the main IGAT gas distribution pipeline.



A further 50 CPs and 16 GPs are being supplied to Viar Valvole for the operation of ball valves in the same size range at the Salman EPC – 3 Sirra Facilities project.

Meanwhile in Libya Valvitalia has also ordered 40 RH range (rack and pinion) hydraulic actuators and two large GH (scotch yoke) hydraulic actuators for installation on the Great Mabrook Oilfield.

Changi Update

Following the original contract for Singapore's giant Changi Water Reclamation Plant (CWRP), encompassing more than fifteen hundred Profibus enabled IQ and IQT actuators, Rotork Singapore's workshops are now the focus of activity for more Changi orders, received from engineering contractor UES (United Engineers Singapore).

More than 250 actuators – mostly IQT and IQTM (modulating) units – are being fitted to ball and butterfly valves from manufacturers



in Finland and Taiwan at Singapore, prior to onward despatch to site. The valves have either been purchased by or free-issued to Rotork Singapore for motorisation as specified by the customer.

Meanwhile, a further 175 Profibus enabled IQT and IQTM actuators have been ordered by engineering contractor Voltas India for over air damper (OAD) operating duties. In addition, main contractor Fouress Engineering (India) Ltd has ordered some IQ91AR/IS18 gearbox combinations to operate very large knife gate valves.

More sub-sea gearboxes heading East



Rotork Gears has been selected by Italian valvemaker Viar Valvole to supply more gearbox operators for subsea ball valves in Asia.

The latest order, for four SSW7/B4 units, follows those for a total of twenty-four SSW5/B4 units on the previous phase of the same project, received from Viar Valvole and Werner Bohmer. The latest SSW7/B4 gearboxes have been supplied with pressure compensators, high visibility position indicators, direct vertical mounted ROV inputs and stainless

steel handwheels with chain and clip for emergency operation in the event of ROV failure. They are mounted on Viar Valvole LF2 forged welded ball valves with Inconel 625 cladding and F51 trim (pictured). Further contracts are anticipated throughout the next year.

Rotork Gears manufactures a full range of gearboxes designed to withstand the harsh challenges of sub-sea operating environments, that can be customised with a wide range of optional features to meet the specific requirements of every application.

For further information contact Rotork Gears on 0113 205 7276, dspeight@rotorkgears.co.uk



Algerian oil and gas pipeline

Pictured at valvemaker Control Components Inc. (CCI), here is one of twelve Fluid System GP range pneumatic actuators, complete with hydraulic manual override and electro-pneumatic positioners, supplied for the final stages of the Sonatrach Oil Pipeline Project in Algeria.

The Rotork GP-200C-585A/D1 actuators operate CCI 30 inch Class 300 rotary drag ball control valves that will control the flow of oil from onshore facilities to five offshore loading stations off the coast of the Algerian oil ports of Arzew, Bejaia and Skikda. The selection of GP actuators for this application was

positively influenced by their canted yoke design, which closely follows the torque curve of the CCI valve design, improving operational efficiency and control.

The contractor for this part of the Sonatrach Oil Pipeline project is OPE Inc., who was awarded the contract in 2003 by FMC SOFEC Floating Systems for pipeline design and procurement services relating to the transportation of crude oil and condensate hydrocarbons from onshore facilities.

Also pictured on the front cover (Contract News) is one of the Fluid System GP actuators on 24 inch CCI rotary drag ball control valves ordered for a Bechtel project at Atlantic LNG in Trinidad.

First order for Skilmatic's intelligent actuators

The new Skilmatic SI actuator, which incorporates Rotork's market-leading non-intrusive communication and IQ intelligence, has received its first major order. Fifty-nine failsafe SI actuators will be installed for ballast control on the Gulfterra Power Hub semi-submersible, engineered by Houston-based Atlanta Offshore.

The SI actuators are part of a package also including IQ and IQT units ordered by Puffer Sweiven from Rotork Houston. The Skilmatic units were selected as the ideal solution to meet American Bureau of Shipping (ABS) standards for ballast control, providing electrically operated actuation of 8 inch butterfly valves with spring-return automatic failsafe closing on loss of power or control signal. Watertight protection to IP68 was also required and the actuators were treated with a special marine paint finish.

The SI design offered a unique solution, also incorporating the Rotork double-sealed electrical enclosure, integral local controls and manual gearbox override operation.



Houston Water Treatment System

Houston Area Manager Chris Duke reports that Rotork IQ actuators with Pakscan have now been ordered for two phases of a new water treatment plant designed to supply the city with up to 40 million gallons of treated water a day.

The Northeast Water Purification Plant takes water from Lake Houston for filtration and ultra violet treatment. Rotork actuators – with Pakscan supervision on the filters – control the automated operation of the plant.

The actuators on the UV plant are fitted with Folomatics and CPT (Current Position Transmitters) to

regulate the rate of flow, whilst the actuators that control the flow for the high service pumps are fitted with Rotork Modbus RTU control modules.

Chris Duke notes: "The main reason for Rotork Houston's selection as the sole actuation source for both phases has been our ability to package the actuators and service the customer quickly and efficiently. We owe this opportunity to Environmental Improvements Inc., the area municipal representative, who initially introduced us to the customer and engineering house."



Rotork in Control

Rotork IQ Profibus actuators control the flow at Thames Water's flagship project

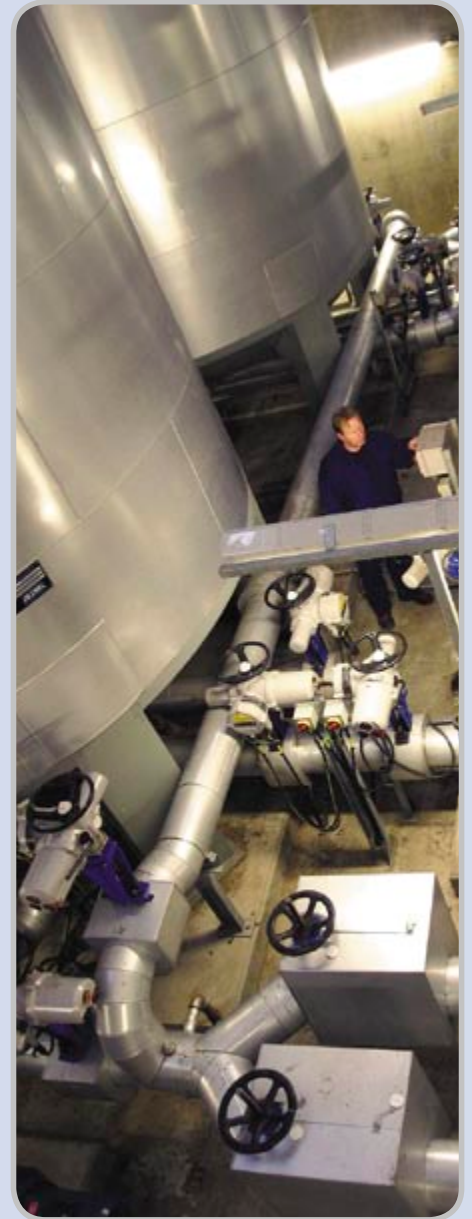
Rotork IQ intelligent electric valve actuators are installed throughout the advanced new Reading Sewage Treatment Works, described by Terry Bane, Project Director at Thames Water as "one of Thames Water's flagship projects, where some of the most innovative technology has been used to design and build the site."

Built on former waste disposal land adjacent to several new business parks, the new plant serves a population approaching 300,000 as well as a local brewery, necessitating an emphasis on odour control, biological nutrient removal, energy recovery and sludge recovery that is unique to this site. The facility's buildings are therefore designed to blend with future developments in the area, whilst acting as an envelope to capture emissions, conceal processing plant and minimise noise. The site features four distinctive 20 metre high egg-shaped aluminium clad digesters and extensive landscaping, including 20,000 trees and shrubs. The technically advanced equipment that it houses matches the state-of-the-art appearance of the site.

Approximately 150 Rotork actuators control the movement of flows throughout the site, from the fully enclosed inlet works to the tertiary filters from where the treated wastewater is returned to the local watercourse in line with the latest EU and Environment Agency standards. Data loggers in the actuators store historical operating data and valve torque profiles, information that can be downloaded and analysed utilising Rotork IQ-Insight software. The collected data can help to optimise plant performance by identifying potential problems and facilitating predictive maintenance.

An equally advanced control system has been installed, utilising twenty-three Profibus 2-wire segments for the instrumentation, actuators and package plant, which are linked to several latest generation PLCs situated throughout the site. The PLCs communicate between each other and with the SCADA central control room using Ethernet over fibre optic cable, facilitating the use of simple web browsers for viewing SCADA screens in the control room or at other onsite and offsite locations. The central focus of the control room is a 50 inch wide screen plasma display, whilst workstations in the control room and touch screens within the plant itself facilitate centralised and local access to SCADA displays.

Virtually all of the Rotork actuators installed are IQ multi-turn or IQT quarter-turn models, the majority factory fitted with the Rotork Profibus DP card. Reading Sewage Treatment Works is the first Thames Water site to make extensive use of the Profibus protocol, which was selected as being the fieldbus system that is most universally available from equipment suppliers. Designed and built by the Target Alliance, a team formed by Thames Water, Taylor Woodrow and Black & Veatch, the plant was officially opened in January 2005.



Rotork and Profibus help Welsh Water's environmental improvements at Cardigan

The sewage treatment works at Cardigan are the focus of a £7million investment scheme undertaken by Dwr Cymru Welsh Water, designed to bring environmental benefits to the Teifi Estuary and other local watercourses. The scheme, designed and built by Morrison Construction and Meica Process Ltd, involves upgrading the capacity of the existing sewerage network and improving the quality of bathing water in the area in line with the latest EU consents.

Improvements at Cardigan STW are centred around the introduction of two Copa membrane bioreactor (MBR) treatment plants, producing a high quality disinfected effluent without the need for additional filtration or ultra-violet treatment, together with other improvements that will increase the works' designed flow to treatment to 100 litres/second.

Meica Process Site Manager Mike Hendy explains that, with 64 membrane sets, the Copa installation is: "the largest in the Welsh Water region and probably the largest in the UK. A major feature is its compactness, enabling throughput to be significantly increased within the boundaries of the existing site." Rotork IQ and IQT intelligent electric actuators are installed on the valves that control the flow and processes in all new equipment areas, linked on three Profibus 2-wire segments to the new MBR control room. A Mitsubishi PLC and customised Copa software developed by Meica Process and General Panel Systems has been introduced to run the plant fully automatically. Telemetry also links all the data from the PLC to the central control room for Welsh Water's operations.

Sewage flows through new inlet screens and grit removal tank to a central flow split tank in front of the reactors. At times of heavy rainfall, excess flow is diverted to enlarged storm tanks. The sequence of these operations, including the supply of air to

the MBRs from new duty and standby blowers, the operation of effluent outfall modulating valves and the daily air diffuser MBR cleaning programme are controlled with the Rotork valve actuators. The actuators' integral data loggers store operating data including valve torque profiles, internal trips and alarms, which is constantly monitored by the PLC.

Effluent from the MBR is clean enough to be discharged directly into the estuary. Sludge is thickened on-site prior to being tankered away. A new standby generator has been installed to operate the site in the event of mains power failure, ensuring uninterrupted operation to further safeguard the environment.

The introduction of Rotork IQ and IQT actuators with Profibus connectivity has been well received at



Cardigan. Simon Stone from General Panel Systems, responsible for software design, configuration and commissioning, draws particular attention to the savings achieved by reduced cabling and the benefit of having a large amount of operating information available from the actuators, whilst Dave Harding, Meica Process Commissioning Engineer (pictured above), appreciates the speed and convenience of Rotork's non-intrusive actuator commissioning and interrogation system.

Mike Hendy concludes: "The Rotork actuators have played their part in the successful introduction of this innovative new plant. There have been very few problems, which have been promptly and efficiently rectified, contributing to the punctual final commissioning of the project at the end of February."

Another first for Fluid System Houston

The contract for gas pipeline metering and regulating stations in Mexico has given Rotork Fluid System in Houston the first opportunity to package and commission HPG (high pressure gas) actuators.

Fourteen actuators were supplied to the Envalco division of McJunkin for the operation of Class 600 trunnion mounted ball valves in sizes up to 24 inches, manufactured by PBV and Cameron. The actuated valves are installed on two ultrasonic metering and regulation stations, designed, engineered, manufactured and commissioned by En-Fab Inc.

The two stations were built for Pemex Gas Y Petroquimica at Reynosa in Mexico. The ultrasonic

meters are 20 inch and 16 inch diameter, with flowing capacities of 233 MMSCFD and 144 MMSCFD (million standard cubic metres per day) respectively at 900 psig.

The Rotork HPG actuators use the pressure of the gas in the pipeline to operate the valves, removing the requirement for any additional power source on the installation. The stations at Reynosa are designed for unattended operation by means of a local control panel, flow computer and PLC, connected to the pipeline DCS (distributed control system) by an Ethernet link.



Rotork in Control

From Bob Elliott, our correspondent in the USA:

Warminster Uses IQs, AQs, and Pakscan To Operate at Peak Efficiency



Below: Operator Stephen Sweder demonstrates how easy valve operation is using the Rotork Pakscan IIS masterstation.

Left: The Warminster Facility. Above: From left, George Pfeiffer, Sewer System Superintendent; Henry McKillip, Lab Technician; and Stephen Sweder, Operator.



The Warminster Municipal Authority Wastewater Treatment Plant, located in scenic Bucks County, Pennsylvania, operates with the efficiency and precision of a fine Swiss watch. It serves a population of about 66,000 and is designed to treat over eight million gallons of wastewater a day from residential, commercial, and industrial users.

George Pfeiffer, Sewer System Superintendent, Warminster Municipal Authority, said, "Automation and teamwork keep things running smoothly around here. We have made a commitment to invest in our employees, have reliable equipment, do most of our own maintenance, and use automation where it makes economic sense."

That simple formula has resulted in good things for Warminster's customers, too. They pay one of the lowest rates in the area.

The Biological Process

The plant was originally built in 1959 and has been upgraded several times, most recently in 2001. It now employs a totally biological A2/O process for wastewater treatment. The main steps in the process include: screening, grit removal and primary settling, A2/O processing and treatment, final clarification, and disinfection by intense ultraviolet light.

According to an engineering consulting firm hired by Warminster, the totally biological A2/O process has shown that it can accomplish BOD and nutrient removal at a much higher process efficiency than conventional activated sludge treatment.

The plant discharges its treated water into Little Neshanamy Creek, which is part of the Delaware River system. By maintaining its highly efficient operation, the Warminster facility is doing its part to help make Little Neshanamy Creek cleaner.

Pfeiffer said, "Keeping the environment clean is a top priority for us. We process wastewater biologically with no chemicals, and we completely remove nitrogen. Specifically, our process removes ammonia, nitrates, nitrites, and phosphorus. After our last major upgrade in 2001, we have virtually eliminated suspended solid overflows after heavy rain storms."

Pfeiffer said, "Because the process is totally dependent on biological treatment, rather than chemical treatment, it is necessary that we monitor and carefully regulate every step of the process. It's important to have a dedicated staff of professionals who are well-trained and thoroughly understand their duties. We've also invested in cost-effective automation equipment that's dependable and able to perform well around the clock."

Valve Automation Trial

In 1999, Pfeiffer started a SCADA pilot project to see if automated valves would help improve productivity and performance on the primary settling tanks. Previously, a total of 16 telescopic valves were manually operated and needed to be drawn down every four hours, 365 days a year.

Pfeiffer called upon Edwin Elliot and Company, Lafayette Hill, PA, to assist them with the project. After a careful analysis of appropriate technology, the Authority decided to install 16 Rotork IQ electric actuators, a Pakscan two-wire loop, and a Pakscan IIS masterstation for local control at the primary settling tank site.

"We did all the wiring and installed the valves, stems, and actuators in-house," Pfeiffer said. "It was easy. The Pakscan two-wire daisy-chain system was simple to hook up. We saved a tremendous amount of money by doing the work ourselves," he added.

"From day one the primary tank settling process became extremely more efficient. It was ten-fold

better than doing it by hand. Now, time and position of the valves are controlled by PLC. We are operating the valves every half-hour now, instead of every four hours as we did when we were doing it manually. More frequent operation, lets us control the process better," he noted.

Expanding the Concept

Because the automated valves worked so well at the primary settling tanks, the Authority decided to apply the same concept throughout the plant. They have Rotork actuators and Pakscan communication systems on all the sludge-handling processes, digesters, and centrifuge.

"All in all," Pfeiffer commented, "we have a total of more than 50 Rotork IQ and AQ actuators with all of them tied to the Pakscan system. The programming is interfaced with our PLC, so it's easy to tell each actuator what to do and when to do it. Each valve actuator has its own address, so we have maximum control."

Warminster takes pride in doing as much work in-house as possible. They do approximately 98% of all maintenance throughout the plant by themselves.

Pfeiffer said, "The reliability of the Rotork actuators and Pakscan system has been excellent. I couldn't ask for anything better."



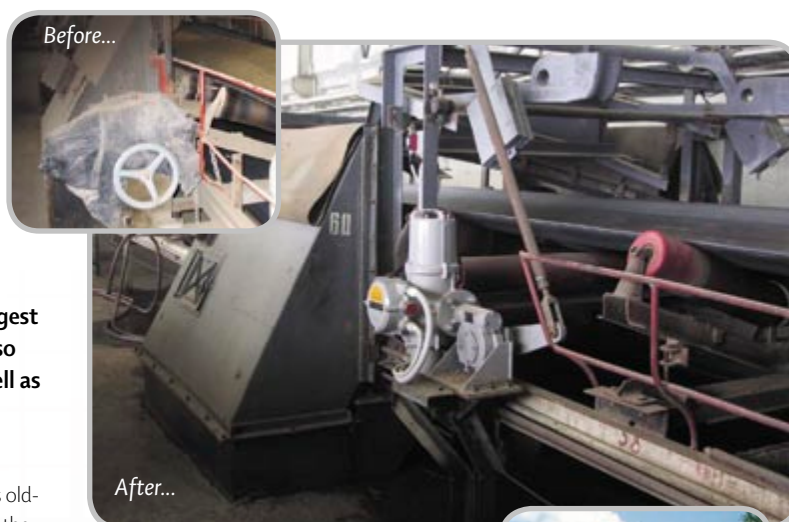
From left, Operators Timothy Pattison and John Dee stand near Rotork AQ actuators, which operate valves for the digester phase of the wastewater treatment process.

Estonian contract is a real belter!

Working with Rotork's specialist retrofit engineers, Bahr Pump OU, Rotork's representative in Estonia, has completed the second part of an unusually demanding actuation project on belt conveyor systems at two power stations. Situated at the city of Narva, the Eesti and Balti Power Plants are the world's largest generating stations to use oil shale as the energy source. Balti also provides a centralised heat and hot water supply for Narva as well as process steam for industry.

In this application there are no valves. Instead the actuators are used on diverter mechanisms that feed crushed oil shale to the power stations' bunkers. The oil shale, which has the physical properties of very soft brown coal, is fed along the belt conveyors, creating a very dusty environment that is continuously sprayed with water jets and hosepipes. In addition, the conveyors are positioned on top of the bunkers in areas where the temperature is very high, ranging from 30°C in winter to 50°C in summer.

The combination of dust, water and high temperature overwhelmed the Russian electric actuators originally installed, some of which had been covered in plastic bags in an attempt to keep them running.



In contrast to the Russian actuator's old-fashioned design, the Rotork IQ actuator – with its double-sealed watertight enclosure and 'non-intrusive' setting features – is well equipped to resist the demands of the application during installation, commissioning and operation. Even so, the stations' owners, the Estonian National Energy Company, demanded a full year's satisfactory operation from the first phase of Rotork actuators installed before they would sanction phase two.

Bahr Pump OU originally installed eighteen IQ20/IW4 gearbox combinations, with linkage designed by

Rotork retrofit engineers to provide the correct combination of torque and speed to meet the 10 second, quarter-turn operation required to move the diverter plates in and out of position. All these actuators survived their twelve month probationary operating period without any breakdowns, enabling the National Energy Company to order a further sixteen units with confidence.



Jordan actuators facilitate environmental upgrade at UK power station

Rotork Jordan electric linear actuators have been selected for the operation of specialised dampers at the centre of an environmental upgrade project at the EDF Energy West Burton power station at Retford in Yorkshire.

West Burton is already equipped with a flue gas de-sulphurisation (FGD) plant that removes 90% of sulphur dioxide (SO₂) emissions from boiler gases in accordance with forthcoming legislation and is now reducing its oxides of nitrogen (NO_x) emissions ahead of the EU Large Combustion Plant Directive (LCPD) that comes into force in 2008.

This is achieved by installing Separated Over Fire Air (SOFA) systems, involving specially designed injectors, ducting and dampers on the generating plant. The contract has been recently awarded to GEEER of Ohio USA and the work is now proceeding on the first of the station's four units.

Jordan LA2000 range electric linear actuators have been selected for the automation of the dampers on this particularly harsh duty. The actuators are controlled by a 4-20 mA signal, fed to the Jordan digital amplifier, which can be remotely mounted to enable the actuator to operate in ambient temperatures up to 108°C (225°F). This, combined with a modulating duty rating of 600 starts/hour and precise positioning, makes the LA2000 an ideal, low maintenance solution for many power station applications.

Jordan actuators were recommended by Rotork subsidiary Exeeco, who worked closely with GEEER on the project. Sales Director Ian Elliott enthuses: "This is a major move forward for West Burton as the existing hydraulic actuators caused problems during operation and incurred large maintenance costs during plant outage shutdowns.

The introduction of the Rotork Jordan will remove this expensive and unpredictable maintenance cost as well as improving the operation of the Secondary Air Damper Control, which is critical for successful emissions reduction."



Rotork in Control

Rotork is 'one-stop' valve actuation source for refinery upgrade

The mix of actuators on this project is a testament to Rotork's ability to provide the most cost-effective and accurate technical solution for any automation requirement.

Rotork is the single source of supply for pneumatic actuators, electric actuators and gearbox operators, with a combined value in excess of US\$ 2million, for new valves on "Project Diesel" at the Fortum Porvoo Refinery in Finland. The valves will be an integral part of enhancements to the refinery's residue hydrocracking unit, consisting of an integrated LC-finer and mild hydrocracker. The main objective of "Project Diesel" is to guarantee the delivery of sulphur-free (<10ppm) diesel fuel and intermediate feeds to other refinery units.

Rotork's contract has been awarded by Mogas Industries, the leading severe service metal seated ball valve manufacturer, based in Houston, Texas. Mogas Industries has won orders for over 700 high and low pressure ball valves in sizes up to 16" for "Project Diesel". Rotork is supplying a total of 311 automated packages, comprising 190 Alecto and Exeeco gearboxes, 52 IQ electric actuators in sizes up to IQ91 and 69 spring-return and double-acting CP and GP range pneumatic actuators.

Fortum Porvoo Refinery is already one of Europe's most modern refineries, with nearly 40 different process units. The refinery produces light and heavy fuel oil, base oils for lubrication, diesel oils, aviation fuels, motor fuels and liquefied petroleum gas (LPG). These products are used in Scandinavia, parts of Europe and the USA.

The contract for actuators and gearboxes was co-ordinated and won by Rotork Fluid System's Houston factory store. Keith Phillips, Rotork project leader, attributes the success of the project to the Rotork international sales team's ability to support the efforts of Mogas: "Never have I seen such determination by so many people from Rotork and Mogas to make this project a success. As a result, I believe that we can look forward to an excellent, long standing relationship with both Mogas and Fortum Oil & Gas."



"Rotork is able to employ strategies such as shipping product from factories in Europe directly to Finland for final join-up and testing instead of bringing them over

to the USA, supported by the Rotork agent in Finland as well as Rotork's own personnel. Using such strategies and working as a team with our customer to achieve their requirements has given Mogas the confidence of knowing that they are dealing with a dedicated and experienced organisation. I am looking forward to the next opportunity with Mogas and know that these team efforts can be utilised with our other clients as well. This was the largest order ever for Mogas Industries and I'm sure that they will remember Rotork's involvement in making it a success".

The Porvoo Refinery project is being engineered and constructed by Chevron Lummus Global and Neste Jacobs OY, with the startup planned for the end of 2006.

SOLAS (Safety of Life at Sea) agreement for actuated valve control systems

Rotork electric valve actuators and hydraulic control systems will be stocked and supplied to meet the latest international maritime safety regulations for bulk carriers. The SOLAS (Safety of Life at Sea) Regulation XII relates to water level detection and pumping systems for the holds, ballast and dry spaces in bulk carriers. The regulation came into force at the beginning of 2004 for new builds and dictates the retrofitting of automated water ingress detection, alarm and pumping systems on existing ships.

Engineers from Rotork subsidiary Exeeco worked closely with marine system engineers to design and develop actuated systems for the control of valves associated with forward space dewatering and ballast control equipment. These are being manufactured for distribution throughout the world. The innovative "non-intrusive" commissioning and communication features of Rotork's intelligent electric actuators, combined with their service proven double-sealed IP68 watertight enclosure design – providing unrivalled protection from the effects of saline atmospheres and even temporary submersion in sea water – contributed to the approval of this equipment for this crucial application.

The SOLAS XII regulations stipulate the control of existing manually operated valves by electric actuators, remotely operated from ships' control decks. Exeeco designed electrical and mechanical interfaces for Rotork products to adapt manually operated valves for a wide variety of ships and bulk carriers on fleets throughout the world. Exeeco's expertise was also employed for the design and manufacture of hydraulic controls for ship safety systems in accordance with the same regulations.



Rotork actuators in Airbus super-jumbo plant

Rotork IQ and IQT electric actuators with Pakscan 2-wire control have been installed on a specialised area of the plant that manufactures the world's largest, most advanced and efficient commercial airliner. The Airbus A380, the world's only twin-deck, four aisle airliner, brings new standards of comfort, better economics and improved environmental responsibilities to the large aircraft sector. Seating up to 656 passengers, the first A380s will enter service in 2006.

The Rotork actuators are installed at Toulouse, where a huge new production plant has been built for the A380. The actuators control the sequence by which jet fuel, stored in six tanks, is pumped into the A380's 310,000 litre fuel tanks to clean them and then pumped back through filters for storage and re-use. A total of 64 ATEX certified IQ and IQT actuators operate Malbranque gate valves, Cameron ball valves and Metso butterfly valves on the plant, controlled by a 120 channel Pakscan IIE masterstation with hot standby.

The hot standby would provide a totally automatic, uninterrupted change-over of control to a secondary masterstation in the event of a component fault, securing the safe, sequential operation of the plant process under any circumstances. Any fault is immediately identified by an alarm signal to facilitate repair.

Rotork France was awarded the Airbus order by a consortium consisting of SPIE Batignolles, Exxon and EECTA.



BP selects EH actuators for vital platform duties

Rotork EH range heavy duty electro-hydraulic actuators have been selected by BP Exploration for a critical valve upgrade on the BP Unity platform, a vital unmanned facility that receives the oil from five fields in the North Sea.

Eleven EH 1.1 actuators will perform ESD (Emergency Shut Down) duties on high pressure (Class 1500) riser valves, replacing traditional hydraulic actuators and bulky HPU's. In addition to its space-saving virtues, the electrically operated EH actuator design provides swift, reliable performance without the maintenance demands of conventional hydraulic equipment, a significant benefit in an unmanned and inhospitable environment. Furthermore, Rotork's dedicated data logging and diagnostic abilities enable valve and

actuator condition to be monitored and logged remotely – in this case at the platform's onshore control centre – minimising the risk of unexpected problems and helping to maintain BP Unity's very high availability commitment.

The actuators also offer a partial stroking capability – a key feature of the design which enables the operator to prove the integrity of the system. These actuators will be certified to SIL 3 verified by TUV.

BP Unity, a critical asset to North Sea Oil production, receives oil from Britannia, Scott, Bruce and Nelson platforms and the Graben Area Export Lines (GAEL System). The oil is routed to a common manifold and then sent ashore through the Forties Pipeline System.



Rotork in Control



Rotork valve actuators protect aircraft refuelling system

Four IQ valve actuators perform crucial leak detection and isolation duties on a new automated jet fuel storage and refuelling installation (JFSI) at a strategic NATO airbase.

The contract to design, construct and commission a new loop hydrant fuel system, awarded to civil and mechanical engineering company Lawrence, is nearing completion.

Lawrence's contract encompasses the construction of two new five million litre part-buried steel fuel storage tanks with concrete jackets, the installation of a total of seven kilometres of cross-base and hydrant-loop fuel pipelines, pumping stations, aircraft hydrant pits, loading and dispensing systems, vehicle hardstanding and inspection facilities. Associated new buildings include the filter house, control room and operations centre whilst electrical work includes the extension of the existing ring main, construction of two 11kv substations and ancillary plant and the provision of emergency standby generators.

The fuelling hydrant is fully automated with control, instrumentation and actuation systems driving six pumps that draw fuel from the two new storage tanks through specialised filtration plant.

The entire £10 million installation is built to the latest NATO specification.

This specification incorporates vital leak detection and isolation provisions that are entrusted to four ATEX certified explosionproof Rotork IQ valve actuators, controlled and monitored by the centralised Cegelec PLC over a dual Profibus 2-wire loop highway. The actuators will automatically close off the affected section of the pipework network if a leak is indicated by a loss of pressure instrumentation signal. The actuators are also used to perform regular routine tests for pressure loss and leakage, as well as diverting fuel flows into appropriate areas for aircraft refuelling or tank filling etc.

Operating data from the actuators, including valve position status and availability, is communicated to the PLC during automatic operation, whilst each actuator can also be operated locally if circumstances dictate.

"The Rotork actuator has been successfully used by Lawrence on other projects and fully satisfies the criteria of ATEX and the NATO specifications" explained David Eyles, Lawrence's Electrical and Instrumentation Engineering Manager. "We have therefore set up an alliance with Rotork as the

preferred supplier of valve actuators, knowing that we can expect a high standard of support on this crucial application, based on past experience.

In fact, in addition to providing product training at the Rotork factory, Rotork has also lent us an IQ actuator so that our engineers can familiarise themselves with the product in our workshops."

Brent Windsor, Lawrence Senior Project Manager added: "The Rotork hand-held non-intrusive setting tool is especially useful in this type of installation. It enables us to set, commission and interrogate the actuators without isolating the power supply or removing electrical covers and, being intrinsically safe, can be used in a hazardous environment without permits or gas detectors. This is not only clean, convenient and secure but also saves a lot of time."

Although only four IQ actuators are installed, the use of the Profibus 2-wire digital control loop still provides considerable cost savings in terms of reduced cabling when compared to traditional hard wiring, whilst facilitating the maximum amount of real-time data exchange between PLC and actuator for improved operating efficiency.

Site Services in Focus

On-site actuator overhaul secures future operation of refinery valves

Rotork's longstanding local agent, Pegler & Loudon Ireland, has organised an electric actuator refurbishment programme to ensure the continued, reliable operation of over sixty motorised valves at the Conoco Phillips Whitegate Refinery at Middleton, County Cork. The programme was performed during a routine refinery shutdown period by a team of specialist engineers from Rotork's Site Services Department, who worked within a strictly planned timescale in order to complete the task without interrupting normal refinery activity.

Most of the actuators are 'A' Range explosionproof units, some of which are more than 25 years old, whilst more recently 'IQ' Range intelligent actuators have also been introduced. The Middleton site is an important oil importing and refining plant, situated on a shoreline location that is exposed to harsh and corrosive ambient weather conditions.

The refurbishment programme confirmed that all the actuators had withstood these severe conditions with virtual impunity. For example, no evidence of corrosion was found in the explosionproof flamepaths due to the integrity of Rotork's 'O' ring sealed watertight enclosure, a benchmark design

feature incorporated on all Rotork electric actuators since the 1960's.

A similar inspection had taken place four years ago, but this was to be a more comprehensive refurbishment and test programme, involving the removal of most of the actuators to a workshop. The overhaul found that in general the only repairs required were caused by normal operating 'wear and tear' and none of the actuators needed to be replaced. With the necessary work completed all the actuators were re-tested on-site and their interlocks checked during the final two days of the contract.



Remember.....

Only Rotork Site Services offers:

- Factory trained Rotork technicians with the best product knowledge.
- Genuine Rotork spare parts with the latest specifications.
- As-new manufacturer's warranties on all repaired equipment.
- Rapid response.
- Flexible retrofit solutions, ranging from turnkey contracts including ground works, cabling and control systems to supply-only or install and commission packages.
- Access to Rotork Service Bulletins guaranteeing the most up-to-date product information.

Rotork valve actuators benefit from holiday island healthcheck

Jersey Water is the sole provider of treated mains water on the Channel Island of Jersey, supplying approximately 90% of the island's population. Two water treatment plants, at Handois and Augrès, utilise chemically assisted sedimentation, rapid gravity filtration and disinfection to treat raw water from reservoir and storage tank sources. Telemetry systems are used to select the best raw water for treatment, reducing the amount of treatment required and optimising treated water quality.

The plants are both equipped with online monitoring equipment to measure water quality at all stages of treatment, whilst treated water flow readings and reservoir levels are remotely monitored so that supply constantly meets demand profiles, which can fluctuate dramatically throughout the time of day or time of year, especially with the impact of tourism.

Rotork valve actuators play a key part in these operations, controlling the flow of water through the processes and facilitating rapid responses to the changes in the treatment and supply requirements.

More than 100 Rotork IQ and AQ actuators are installed at Handois and Augrès all of which have recently undergone a 'healthcheck' inspection to ensure the continued, efficient operation of the treatment plants.

The inspection and repair programme was performed by a two-man dedicated engineering team from Rotork's Site Service Department, who spent a total of twelve days on site to complete the task. During this time an inspection report was prepared for every actuator and any necessary repairs were carried out.



Actuation News

Acquisition strengthens Fluid System in Eastern Europe

Rotork Fluid System has purchased PC-Intertechnik GmbH (PCI), a leading German manufacturer with a first class reputation for providing quality actuation products to meet exacting customer and end user requirements in the German, Eastern European and former Soviet Union territories.

From its headquarters in Melle, PCI has been manufacturing and supplying pneumatic, electro-hydraulic, direct (high pressure) gas hydraulic actuators and control solutions since 1992. More than 70% of sales are through German valvemakers.

PCI products are well engineered and high quality, holding ATEX, CE, BKI, GOST (Russia) KDB (Poland), FTZU (Czech Republic) and SlovEx (Slovakia) approvals. The company will continue to supply its products, complemented with Rotork Fluid System pneumatic products, whilst also acting as a valve automation centre of excellence for the German market.

The acquisition of PCI also enhances Rotork Fluid System's product portfolio, providing the opportunity for increased sales of a complete range of pneumatic and hydraulic actuators.



Rotork Valvekits launches solenoid valves with same-day service

Valve accessory specialist Rotork Valvekits has introduced a new range of solenoid control valves for pneumatic actuators, available with a guaranteed same-day despatch service and supported by a 24 month Rotork Global Warranty.

The new solenoid range, designated 300 Series, is a quality all-metal design featuring the universal NAMUR standard interface for fitting directly to actuators. The result of ten year's experience of the solenoid market, the 300 Series encompasses single and double acting versions, available for all common voltages and incorporating manual override as standard. Economically priced, the range is initially available with IP65 waterproof certification and will be extended during the coming year to include ATEX and other certified versions for use in hazardous areas.

The 300 Series launch also marks the introduction of the RVS (Rotork Valvekits Solenoids) service package, in which the product is available on a same-day despatch basis and supplied with a 24 month Rotork Global Warranty, which the company believes is unique in the industry.

Rotork Valvekits' Martin Hunt is enthusiastic about the new launch, explaining: "Increasing demand from industry for high specification, low cost solenoids has made many manufacturers unable to compete, so Valvekits has started the exciting new RVS venture, which will provide customers with market leading solenoid specifications at market leading prices."



This is Houston – and reception is good!

Cooper Cameron Valve managers from Central and South American countries have attended a reception at Rotork Houston to discuss ways of strengthening working relationships in these important territories, reports Emilio Osterling, Rotork director for sales and marketing, Latin America.

A presentation on Rotork electric and Fluid System actuators and our valve automation capabilities was followed by a tour of the Houston facilities. The group was particularly impressed by the local support available from Rotork representatives in their countries as well as Rotork's proven capabilities at Houston for valve automation and functionality testing.

Cooper Cameron Valve manufactures flow control equipment and provides aftermarket services for worldwide onshore, offshore and sub-sea oil and gas production, pipeline and process operations.

Rotork Gears - up delivery times

Rotork Gears now offers the successful HOB range of hand operated bevel gearboxes for gate valves, globe valves and penstocks on a two week delivery timescale.

Available in four sizes with a torque range up to 1,355Nm (1000 lbs ft) and thrust range up to 356kN (80,000 lbs), the standard HOB unit features a fully enclosed IP67 water and dust tight cast iron body, grease-filled for a maintenance-free life. All models can be supplied with handwheels and rising stem cover tubes, whilst optional extras include position indicators, locking flanges, stainless steel input shafts and an improved IP68 enclosure specification.

IQTFS brings failsafe operation to intelligent electric quarter-turn valve control

Market-leading Rotork IQT intelligent direct drive actuators for quarter-turn valves are now available with failsafe options, enabling valve operation during mains power failure.



Two types of IQTFS failsafe actuators are available. For hazardous and non-hazardous locations the Type 1 External Failsafe version is designed to be connected

to an external 24 Vdc independent power source. On loss of mains power the actuator automatically switches over to the failsafe supply and can be controlled locally or by a hardwired remote circuit.

In non-hazardous locations only, the Type 2 Battery Failsafe version is equipped with an integral 24 Vdc battery pack, which is kept charged by the mains power under normal circumstances. The actuator can be configured to automatically use the battery supply to open or close the valve, or stayput awaiting a local or remote command, if mains power fails.

IQTFS actuators continue to embody all the features and virtues of the standard versions, including permanent double-sealing, infra-red "non-intrusive" commissioning, on-board data logger, rationalised "system on a chip" intelligence, comprehensive control flexibility and operation by three phase, single phase or DC supplies. Full details can be found in Rotork publication E116E.

Stocked in Holland for Europe



Rotork AWT actuators are now being held in stock at Rotork's Holland factory for swift deliveries on orders from mainland Europe. First orders have already been received from Holland, Italy and Spain.

The AWT is a robust, IP68 watertight actuator designed for simple valve control applications.

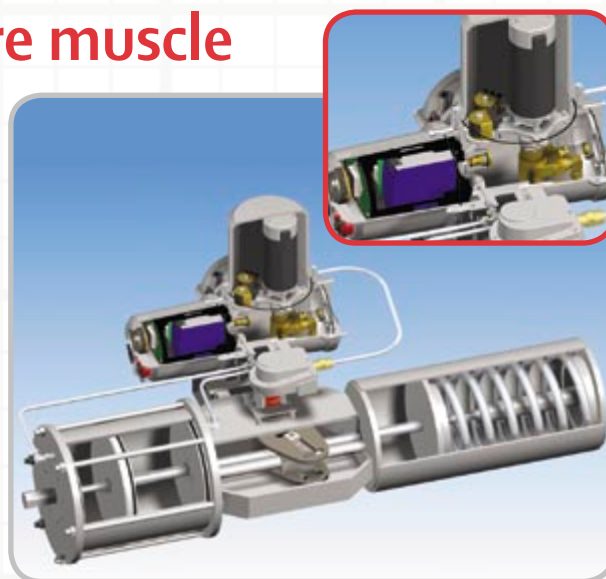
Skilmatic intelligence gets more muscle

The recently launched Skilmatic SI actuator – combining Rotork's innovative infra-red technology and IQ intelligence with the Skilmatic benefits of electric modulating and failsafe control – has been boosted by the introduction of a larger model.

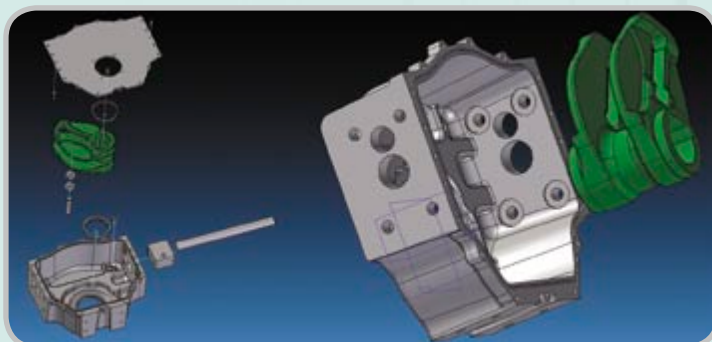
The SI-2 actuator provides a maximum thrust of 70kN (16,000 lbf) for linear valve operation and maximum torque of 7400Nm (65,500inlbs) for quarter-turn valves. Designed for watertight applications to IP68 (NEMA6) the SI-2 can be specified to operate from three phase, single phase or 24Vdc power supplies.

SI actuators provide the simplicity and flexibility of electrical operation combined with the precision of hydraulic operation for modulating or ESD failsafe applications. The easy to read illuminated LCD display provides valve position, control and alarm icons as well as giving access to comprehensive diagnostic information and help screens. Actuators also provide continuous valve position and internal hydraulic pressure monitoring, fault alarms, partial stroking and selectable 4-20mA analogue inputs and outputs.

The full range of Rotork internal fieldbus communication cards are also available, encompassing Pakscan, DeviceNet, Profibus, Modbus and Foundation Fieldbus.



New material increases performance and reduces price



The popular 085 model size GP/GH pneumatic/hydraulic scotch yoke actuator is now made from ductile cast iron as standard, increasing its structural torque by 50% to 10,500 Nm.

Ductile iron replaces fabricated steel for the centre body and scotch yoke – reducing the price as well as increasing performance – although the steel components are still available as an option and fully interchangeable.

Further savings become apparent as the increased performance from the new 085 body will enable it to be used instead of the next size up, 100 body in many cases. The new 085 scotch yoke is also available with a canted slot, further increasing the torque at one end of stroke, facilitating an even more economical actuator choice when this torque profile is suitable for the valve.

Personnel News

Operations Director aims to produce the goods



Alastair Spurr has been appointed as Rotork Operations Director, following the retirement of George Malcolm. Alastair is both an engineer and production specialist by training and experience.

A Chartered Engineer with an Honours Degree in Mechanical Engineering, Alastair has spent his working life organising and improving mainstream production performance for engineering businesses in the UK and worldwide. His experience encompasses diverse products ranging from valve positioners and pneumatic components to furniture and timber frame houses.

Impressed with the powerful performance of Rotork's IQ and associated actuator products, Alastair aims to enhance their success by establishing a truly world-class manufacturing environment in all of Rotork's production facilities. When relaxing from the challenges of his profession, Alastair enjoys the equally challenging leisure activity of sailing and has more than once competed at an international level.

Simon is seeking international business development

Simon Brown has been appointed as Rotork's first International Business Development Executive, moving from Rotork Skilmatic where he was Sales Manager.



In this new position, Simon will be working with Rotork companies and agents to promote and develop sales, examine areas where coverage needs to be improved and identify new markets and territories. Examples include the promotion of the AWT actuator into appropriate international markets and increasing the profile of all Rotork products in the marine industry.

Skilmatic sales and engineering



Above:
Simon Kersley.



Right:
Simon Rodgers.

Two new personnel appointments strengthen the sales and engineering teams at Rotork Skilmatic.

Simon Kersley is Skilmatic's new Regional Sales Manager for Europe and the Middle East.

Experienced in the valve and actuator industries, Simon has previously worked for Fluid System and joins Skilmatic from Thomson Valves.

Simon Rodgers has been appointed Engineering Manager for Skilmatic, following eighteen month's involvement in the development of the SI range.

Prior to working on the SI range he spent the last four years as an application and mechanical design engineer with the Skilmatic division.

New UK Sales Manager for electric actuators

Laurence Kettle is the new UK Sales Manager for Rotork Controls Ltd, a position to which he brings many years' experience of sales management and technical marketing in the valvemaking industry.



Laurence has held management positions at a number of leading valve companies and joins Rotork from Metso Automation, where he was working with agents and distributors throughout Europe and the Middle East. He is now looking forward to increasing the success of Rotork's electric actuator products with UK valvemakers, engineering companies and end users.

Well known in the industry, Laurence has been active with the BVAA for many years and is currently the chairman of the marketing committee. At Rotork he replaces Russell Jackson, who has joined Streat Control Agencies Ltd, Rotork's exclusive representative in New Zealand.

New Area Sales Manager USA

Mike Choi strengthens our Gulf Coast sales team, becoming Rotork Area Sales Manager for Louisiana, Mississippi, Arkansas and Western Tennessee, working out of Baton Rouge.



Mike is an important addition to our sales team whose main role will be to focus on working closely with representatives to increase Rotork electric actuator sales and market share in the territory.

A Louisiana native, Mike is a graduate from Louisiana State University with over 25 years experience in automation, instrumentation and process control. Mike was previously a sales engineer with Siemens Westinghouse Industrial Automation and Control, and earlier a principal accounts manager for Honeywell, responsible for smart instruments, SCADA and DCS product sales to the oil and gas industry.

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