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SIPOS for South American Power Scheme



An industrial fan installation for a major emissions reduction programme in Chile is supported by SIPOS 5 HiMod actuators. The extreme precision actuators have been selected for a \$ 170 million power plant project incorporating the Tocopilla thermal power station and Mejillones coal fired plant managed by E-CL SA.

SIPOS 5 HiMod actuators were selected for their advanced flexibility and accuracy. The first actuators will be supplied in November 2011, followed by subsequent commissions scheduled for February and September 2012.

New SIPOS Sales and Service Partners

With an export share of 70 % SIPOS is a very internationally oriented company. Located across the globe, SIPOS customers include Russian valve makers, Chinese boiler manufacturers and Arabic contractors.

As a result, SIPOS actuators are found in all the regions of the world. Installed in power plants, water and wastewater works the technology supports processes that are essential to maintaining basic living standards: this is a responsibility that is taken seriously by SIPOS and which is backed by the highest standards of service and quality.

SIPOS supports its customers and projects from dimensioning to delivery and from mounting to commissioning of its electric actuators. Improvements to the sales and service network are ongoing: these are seen as essential to continuing to provide the highest levels of customer support / technical assistance and a competitive solution for the global actuator market. Reflecting this philosophy, four new partners have been appointed which further extend the company's global representation.

HUBTEX in Turkey

With a track record spanning a number of decades, HUBTEX has developed an extensive customer base. Particular strength is offered for the power production sector, which is a



The HUBTEX Team for SIPOS: Ibrahim Büyükcinar, Metin Talayhan, Nurten Erez, Veli Özalp, Ikram Ahat

major Turkish growth industry. Having established a new division for the energy sector, HUBTEX has adapted its service to respond to the growing demands of this market.

SIPOS' actuators are already extensively adopted in Turkish power plants and, with the additional support of HUBTEX, this installation base is predicted to expand.

HUBTEX has been identified as a highly competent partner, ideally placed to provide sales and service for SIPOS products. First joint activities have been completed and SIPOS is excited at the benefits that will be afforded to its customers in Turkey.

IESS in Mexico

IESS is the newly appointed sales and service provider for SIPOS in Mexico.



The IESS Team, SIPOS' new Partner in Mexico

With lengthy experience in the actuator industry, IESS is ideally suited to join SIPOS' sales organisation. With a key focus centred on retrofitting power plants, IESS is a skilled solutions provider offering all the required technology, components and work force capability to support SIPOS in the region.



SIPOS' Partner in Bangladesh: PECC

PECC in Bangladesh

PECC (Progressive Engineering and Construction Company) is SIPOS' partner in Dhaka, Bangladesh. The engineering company employing 45 people works principally in the power plant sector. SIPOS products are ideally suited for power industry applications and an existing contract utilising the company's actuators is at the prestigious Mymensingh plant.

ADOSET in the Middle East

ADOSET is the newly appointed SIPOS agent for the GCC region. The company's CEO and founder, Ahmed Sobhi has previous experience of SIPOS' sales and service gained over three years working for other companies and

ADOSET solutions are provided for oil&gas, power generation, water, wastewater and desalination plants.

Located in Abu Dhabi, the company – which has strategic partners in virtually all GCC countries - plays a key role for the region. A particular area of specialism is offered for district cooling projects, which are growing in popularity in the region for large infrastructural projects.

All SIPOS Aktorik's partners' agents & representatives receive detailed product, sales and service training ensuring. As a result, agents are competent partners, skilled in addressing the most complex actuation challenges, able to answer the most technical valve automation questions and to provide solutions incorporating SIPOS products.

Simplified SIPOS Commissioning Attracts GKM

The largest contract for SIPOS Aktorik's non-intrusive, encoder version SIPOS 5 actuator was announced at PowerGen Europe 2011. Launched in December 2010, the product has been selected by Grosskraftwerk Mannheim (GKM) for block nine of its power plant. The project for one thousand actuators was awarded by Siemens.

SIPOS has long standing track records with both Siemens and GKM. Originally part of the Siemens group, SIPOS is a preferred supplier for the engineering conglomerate. Over the last decade, the actuator innovator has supplied products for a number of GKM installations including GKM 6.

GKM, which comprises RWE, EnBW and MVV Energie, is a major utility producing electricity for households/railroads and energy for district heating. Representing a 1.2 billion Euro investment, planned inauguration for block nine is 2012/13. Gross production will be 911 MW, with electric efficiency of 46.4 % and district heating production, with cogeneration, to a maximum of 70 %

Key features of the actuation solution to be supplied by SIPOS for the block nine installation are non-intrusive Position (niP) encoder and Bluetooth functionality for remote programming and downloading of data.

Commenting on the advantages of the non-intrusive solution, Michael Molle, SIPOS' R&D Manager, said:



"The non-intrusive position encoder offers high precision and allows position detection without battery or buffer capacitor, even when the main power supply is off.

End positions can be set without opening the actuator housing – this non-intrusive functionality offers major benefits regard-

ing commissioning for power plants as it simplifies the process and minimizes the time required for procedures."

The Distributed Control System (DCS) for the GKM installation will be provided by Siemens.

Case Study: Extended Life – Erie Non-Potable Water Pumping Station

The town of Erie, Colorado was in need of a new pump station to move treated water from their North Water Reclamation Facility storage reservoir to one of two locations. The required discharge process for the water was either via low-head pump to Boulder Creek or to the facility's irrigation distribution system via a high-head pump.

optimized solution for pump control developed by Pipestone Equipment incorporates low headloss ValMatic ball valves controlled by electric actuators manufactured by SIPOS Aktorik. The SIPOS actuators for Erie were programmed to create a linear acceleration and deceleration of water during normal pump operation. Additionally, rapid closure

effectively to produce linear flow change, the SIPOS actuated ball valve will provide the minimum system transients possible for a pump control valve. Additionally, the actuator speed-time curve can be easily calibrated and adjusted in the field, as required, for fine tuning.

The emergency operating condition created by a loss of electrical power while operating the pump station at full flow rate requires additional analysis including creation of a hydraulic system model. Each system has unique characteristics which determine the magnitude of water hammer transients. The solution for Erie includes a combination of fast closing ValMatic ball valve via SIPOS emergency operating mode and a Singer Valve electronically timed surge anticipating relief valve. The Singer valve control panel includes an operating time adjustment feature which allows the surge valve to remain open and discharge high pressure surge waves. Fine tuning of the operating time can be achieved via hydraulic model or field trials.

In summary, a combination of state of the art valves and programmable valve controls with accurate engineering calculations and modeling will provide an optimized pump station design that promotes a long and trouble free system life.

And, by minimizing both normal and emergency transient magnitudes, piping system stresses are kept as low as reasonably possible.



North Water Reclamation Facility

Re-using water normally discharged from wastewater treatment plants is a growing trend as it makes good use of a valuable resource, especially in dry climates such as Colorado.

Non-potable uses, such as irrigation, are the most common destinations as it saves precious potable water for household and other domestic uses.

Pipestone Equipment was selected to provide valves for this project, which was designed by Burns & McDonnell and constructed by Jennison Construction. Included in the scope of supply were the isolation valves and air valves that are typically required for such systems. Technically significant for the North Water scheme was the combination of engineered pump control valves which, along with a surge anticipation valve, were designed to work together to minimize hydraulic transients and provide a long system life.

An Optimized Solution

Minimizing hydraulic transients during both normal and emergency operating conditions will improve system longevity and reliability. To achieve this at the North Water facility, an

during a loss of electrical power event via backup from an uninterruptible power supply is facilitated by the actuation technology.

The ability to programme SIPOS' actuators to change speeds at any time during the valve stroke means that linear flow rate change can be obtained: calculations made by Pipestone included input from system head, pump and valve C_v curves. When implemented



The North Water Reclamation project at Erie is the latest in a series of installations that confirms Pipestone Equipment's expertise in project management

SIPOS Fieldbus Solution Supports RWE Scheme

SIPOS Aktorik's full system integration capability, including fieldbus competency, has been confirmed with its role managing the DCS commissioning of over 2,300 actuators at the Neurath power plant, BoA 2/3 in Germany. The landmark project illustrates the company's DCS integration capabilities and strength in providing tailored customer solutions.

The installation is understood to be the industry's first actuator application to integrate PROFIBUS DP with V2 services for enhanced communication capability.

Reporting on the brief, SIPOS advises that, with Siemens as the main DCS supplier, the protocol was specifically adapted to meet the plant's requirements. Focus was put on DP V2 redundancy functions according to PNO 2.21.2; synchronisation of inputs / outputs and DP V2 time-stamping of events in accordance with PNO 2.192.

As part of the fieldbus functionality provided by SIPOS, the company's actuators are connected to the plant's control system via PROFIBUS DP. The actuators' fieldbus interface has been programmed by SIPOS and accurate torque curve recordings have been



ensured. A capability to oversee fibre-optic installations for the plant's PROFIBUS DP-V2 network also formed a key part of SIPOS' support programme for the scheme.

BoA 2/3 is the world's largest lignite power plant, which is owned by the RWE Power Group and includes some of the world's most advanced steam turbine and generator technology. Latest technology will result in high efficiency and considerably reduce carbon dioxide emissions per kWh, compared with existing lignite-fired power plants.

SIPOS' credentials for RWE include the supply of over 1,000 actuators to the power group's BoA 1 power plant in Niederaussem: this project endorsed SIPOS' technical lead spearheading fieldbus actuation solutions.

SIPOS Successful at Challenge Roth Triathlon



Thomas Heid takes a corner in the Challenge Roth Triathlon

A SIPOS Aktorik team successfully completed the 2011 'Challenge Roth' triathlon in Bavaria, Germany. Participating for SIPOS were cyclist Thomas Heid; runner Siegfried Ehrmann and swimmer Matthias Bohn.

For over twenty years, the small town of Roth in Bavaria, Germany has hosted a triathlon and the challenge has grown in popularity each year. Widely recognized as the biggest event of its kind in Europe, around 3,300 individual starters and 600 relay teams entered the 2011 event.

Considered a 'must do' date on the sporting calendar for any serious triathlete, participants are attracted from around the world – as a result, the SIPOS team raced against international athletes.

With an excellent team time of 10:08.24 hours for 3.8 km swimming, 180 km cycling and the marathon (42.195 km) an excellent 101st place out of 600 competing relay teams was achieved.

Thomas Heid from SIPOS R&D Software gave an outstanding performance cycling the 180 km in 4:49 hours.

SIPOS Software Aids Sydney Water Filtration Scheme

Valve operation at an Australian Water Filtration Plant (WFP) at Nepean, 75 km south of Sydney, will be supported by SIPOS Aktorik's variable speed, electric actuators. Advanced actuation communication capability for SIPOS' 5 Flash actuators was demonstrated to secure the contract for 60 units by local distributor, Barron GJM Pty Ltd.

Located close to two dams, the Nepean WFP, owned by Sydney Water, incorporates a cluster of five filtration plants.

An upgrade of the scheme's 12 PLCs and SCADA system, comprising a primary and secondary server, is being implemented to enhance the speed of screen updates and reliability of the communication network. Commenting on how bus technology and software programming support for the plant's SCADA control system addressed the technical considerations of the project, Weyand Magnaye, Water Products Manager for Barron GJM said:

"With firmware specifically written by SIPOS for Sydney Water, and by conducting in-house testing on a demonstration actuator, we were able to meet the client's software changes on the fieldbus system. Technical competency of the actuation solution demonstrated at the scheme also includes interlocking capability which, via PROFIBUS, enables and disables the local push button functionality. Additionally, a failsafe function has been incorporated which ensures that, if a bus communication fault occurs, the actuation system defaults to an emergency position."



The order is the latest in a series of actuator commissions secured by Barron. Previous Sydney Water contracts include SIPOS actuators installed in a \$ 150 million improvement programme at the North Head STP.