

Pigging Industry News

the newsletter of the Pigging Products & Services Association



5th annual pigging seminar Aberdeen, 20th November

THIS YEAR'S seminar will look at emerging issues in pipeline pigging and show how PPSA members are addressing the challenges and needs of ageing pipelines. Always well-received, the events are packed with information about pigging and offer an ideal opportunity to meet up with experts from a wide range of pigging companies in an informal friendly atmosphere. No sales pressure, just a day packed with information about pipeline pigging. All delegates receive a copy of the seminar papers.

At BP's suggestion, we introduced the 'Ideas Workshop' last year and, by popular request, it is back on the programme

again. The workshop provides the chance for delegates to air their views, suggest ideas for the future, ask questions, etc. A panel of experts will field questions from the floor and – subject to the time available – all topics raised will be tackled. Delegates can, of course continue discussions with member companies on a one-to-one basis during the breaks.

If you would like to book a place, please complete the booking form on pages 6-7 of this issue of *Pigging Industry News* and send it to the organizer at PPSA's UK address (*below*). Generous discounts are available for bookings for two or more places.

Welcome

SINCE reprinting the *Buyers' Guide and Directory of Members* in July, the following new members have joined:

Full members: **Spetsneftegaz**, Russia, and **AGR Pipetech AS**, Norway

Individual Member: **Mr Satoshi Higashi** of the Hitachi Research Institute of Japan.

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Extracts from a letter received from PPSA's newest Chinese member

BY WAY OF introduction, the PPSA was asked to contribute to a publication produced by GDS Publishing for the Chinese market. One of the questions GDS asked, was what were the benefits of joining PPSA for pigging companies in China. We decided to ask our Chinese members this question themselves. As a result we received a letter from Yong Shun Pigging Services Co Ltd of Lang Fang, Hebei Province, answering that and many of the other questions put by GDS Publishing, from the local Chinese point of view. There follow some extracts from that letter which should prove interesting to PPSA members and other readers alike.

"Yong Shun Pigging Services was set up in 1999, producing a variety of cleaning pigs for diameters from 4-40in. Between them, its founders and managers have over 30 years experience in pigging and are now involved in China's new major W-E pipeline, the eastern section of which is 40in diameter and 1491km long. The pipeline wall is anti-corrosion coated, and it is important not to damage this during cleaning. We used our Model 8 mechanical-cleaning

device which has supporting cups on the front and rear ends and three intermediate cups for sealing purposes. In addition a high elastic resin bumper was put at the front to prevent wall damage.

"We at Yong Shun have received very good reports from our customers and can proudly claim that our products occupy an important market share in China. More than that, many of our customers get to know PPSA through using our products, and believe PPSA member firms to be reliable. In future the name of PPSA will be as widely known in China as that of the API. With PPSA's organized activities and guidance, it has made its members products more standardized in their service and production, and this helps members to increase their pig design capabilities at a much faster pace. It has shortened the technical gaps among its members, and it has created more economic and social benefits for each member country's pipeline cleaning industry.

"The years of membership for PPSA's Chinese members are

relatively few compared with our counterparts in Europe and America. Frankly speaking, we owe our European and American counterparts a lot for our current achievement and progress made in the technological development of our products which are more suitable for China's situation.

"In other words, we have successfully acquired and mastered the advanced technology and experience from PPSA's European and American members. For that we would like to express our appreciation to those members and our thanks to PPSA for its efforts to pull all of its members together in the past years."

President of Yong Shun, Ding Song, suggests PPSA and its associates might consider holding a pigging conference in China and offers his support for such a venture. That's something for John Tiratsoo, of *Pipes & Pipelines International* (and also editor of *Pigging Industry News*) and BJ Lowe of Clarion Technical Conferences to think about, perhaps.

Industry news

Pre-commissioning Egyptian gas line

THE pre-commissioning of the Egyptian *East Gas* pipeline project in the **Egyptian Natural**

Gas Co (Gasco) has been successfully completed by **Halliburton's** Pipeline and Process Services division. The pipeline will be used to export gas to Jordan, Lebanon, Syria,

Turkey, and other European countries. The 36-in by 268-km long pipeline runs from El-Arish, Egypt, to Aqaba in Jordan, and is split into land and offshore sections. The 250-km long land

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line extends from El-Arish to Taba, while the 18-km offshore line runs from Taba to Aqaba, crossing the Gulf of Aqaba in water depths of 850m.

Pre-commissioning included fresh water flushing, residual dewatering, pipeline cleaning, pipeline swabbing, air drying to –5°C dew point, nitrogen-purging, and gas-in commissioning. “The first challenge was time,” said Reda Salam, project manager for Halliburton. “The tight schedule commenced with the initial notification request for mobilization in May to final gas-in in June. By working on three-line sections simultaneously, around the clock, and by applying Gasco’s suggestion to launch the pigs from the pipeline mid-station to benefit from the very high static levels, we were able to complete the drying operations four days ahead of schedule at an average dew point of –20°C. With the assistance and cooperation of Gasco, the gas-in commissioning was completed on schedule in June.”

The second challenge was logistical. Personnel and an extensive list of equipment – air dryers, compressors, nitrogen pumping units, nitrogen tanks, test cabins, and store containers – were mobilized from the division’s offices in Egypt, Saudi Arabia, Abu Dhabi, Qatar, Norway, and the UK, requiring a tremendous amount of teamwork and dedication from all parties, said Reda. The third challenge was safety. Employees met this challenge head-on by achieving zero motor vehicle accidents and lost-time incidents during the 45,000 miles clocked during the project.

In a letter to the company, Gasco’s chairman and managing director, Mahmoud Latif, said, “Because of Halliburton management commitment and our mutual cooperation, we were able to finish this project in due time and within budget. We want to re-emphasize our appreciation to your superior performance and professionalism, and we hope to continue our joint cooperation in future projects.”

New calliper tools

PIPELINE Engineering has introduced a range of calliper tools to the range of products and services it offers its clients. Available in sizes 6-48in, the tools are equipped with state-of-the-art electronics and have display and interpretation software that enables the field technician to produce an on-site report before leaving the site. The tools are lightweight and robust, and are able to run in most media.

With 30 years of experience in supplying cleaning tools to operating companies world-wide Pipeline Engineering has built up a tremendous amount of knowledge with regard to solving clients’ pipeline-cleaning problems. Its newly-formed production cleaning consultancy division is intended to provide assistance to clients with their day-to-day cleaning problems and with drafting operational cleaning procedures. Using experienced personnel, the division is also able to offer on-site supervision during cleaning operations. The division has already assisted clients in the UK as well as in North and West Africa.

The company can also supply a non-intrusive device to register the passing of cleaning tools. This is a magnetic unit and requires a magnet package to be mounted on the tool. The sensor unit can be mounted externally anywhere on the pipeline, and is designed to withstand the harsh and demanding environment found in the pipeline industry.

Independent testing of pneumatic actuators and valves

THE Easi-Test from **Smith Flow Control** is a new device that permits independent testing of pneumatic actuators and process valves on live systems. Fitted between the valve and actuator, when activated it allows independent testing and operation of the actuator or valve. Until now, function testing of actuated valves while a process was live has been extremely difficult, usually involving the simultaneous operation of both the actuator and valve. The operation also required a mechanism to depressurize the actuator supply source. The new equipment is designed to overcome these difficulties, and make independent testing of both declutchable and automatically-clutchable valves a simple procedure. A lever tool is introduced which automatically disengages the actuator from the valve stem. The valve can then be operated like a traditional manual valve whatever the position of the actuator or the live process condition.

When the valve is declutched, it can be locked in any position, allowing maintenance, function

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testing, or changeout of the actuator without interrupting the process or compromising the process management system. Removing the lever tool ensures the automatic re-engagement of the actuator and valve coupling when the actuator and valve next align: this either occurs automatically or on the next process trip. Throughout the procedure the operator maintains full manual control of the valve and, while the lever tool is engaged, the valve cannot be operated remotely.

Leak-testing in Pakistan

A CONTRACT has been awarded to **BJ Process and Pipeline Services** by **Clough Engineering Ltd** of Australia to supply nitrogen leak-testing services for the processing facility on the *Sawan* gasfield development in Pakistan. The Austrian oil and gas group, **OMV**, is developing the onshore field, which is located to the NE of Karachi, in joint venture with **Pakistan Petroleum Ltd, Government Holdings Pakistan Ltd, Eni AEP Ltd**, and **MND** of the Czech Republic. The primary element of the project is the central processing plant that will have a capacity of 340 million scfd when both gas trains are operational. In addition to the process facility, there are flowlines from the producing wells and a 15-km long, 20-in gas sales pipeline.

OMV awarded the engineering, procurement, construction, and commissioning contract on turnkey basis to Clough Engineering, who has in turn

subcontracted BJ PPS to perform pre-commissioning nitrogen leak-detection services on the process facility pipework systems.

Apologies...

...to Halliburton. In our last issue, we should have written that it was

Halliburton's Pipeline and Process Services who had won the Pipeline Industries Guild's offshore technology award, and not the company's Energy Services Group.

CMSS: the benefits of a true multi-diameter suspension system

FTL Seals Technology describes its new pig suspension system in action

THE centreline multi-dimensional suspension system (CMSS) was designed and patented as a direct result of the pipeline pigging requirements for the Statoil Åsgard pipeline commissioning project in 1998.

The Åsgard multi-diameter gas transporter line was a totally different project from other pipelines and pigging operations with which the company had been involved. The pipeline length would be 710km at 42in diameter, and the last 500m would reduce to 28in diameter. Drive disc and support disc wear would be a critical consideration.

By applying basic hydraulic cylinder design principals FTL decided that, contrary to previous designs, the support function of the pig should be completely separate from the sealing and drive function. Due to the expected high rate of wear that the sealing discs would have to withstand, it was decided to take the hitherto unprecedented step for a commissioning pig to mount

the whole unit on a self-supporting and self-centering suspension system. By carefully designing the suspension, the potential to overload the wheel assemblies was avoided when passing from the larger to the smaller diameter pipeline sections. Furthermore, a slow rotary motion would be imparted to the whole pig train to even out the wear on the discs.

The ability of CMSS to run on centreline gives a benefit to the pig manufacturer and the operator in that the traditional oversize on the outer diameter of the drive discs, to compensate for the wear in long dry gas pipeline runs, is now minimized. As there is less material in contact with the pipeline wall during the pig's journey, the friction generated between the drive disc and pipe wall is now much reduced.

Tests conducted at Statoil's K lab showed that a drive pressure differential of approximately 0.2 bar was sufficient to move the unit smoothly along the pipe.

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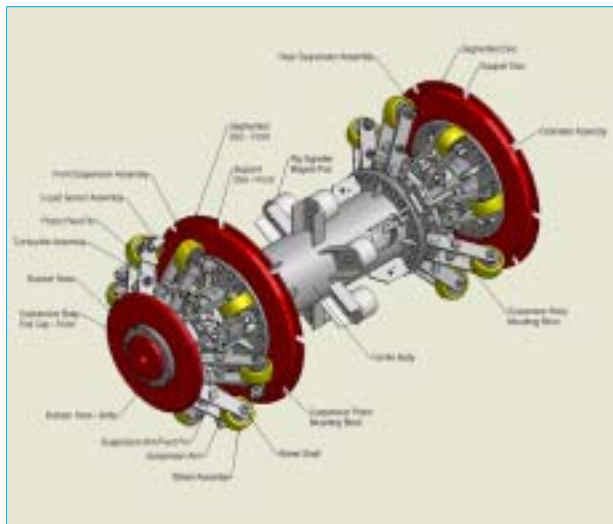


Fig.1. Typical cleaning pig fitted with CMSS.

Because all suspension arms of CMSS are interconnected, the suspension can maintain its pipe diameter geometry with only two arms in contact with the pipe wall. This feature offered an additional benefit to the operator in that should offtakes not be fully barred, then there is little fear of losing a wheel and suspension arm, as is the case on some independently-sprung systems where the suspension arms are fully-independent of each other.

Progressive cleaning

The benefit of the CMSS system was recently exploited in another pipeline contract by a pipeline operator who was unsure what it was in the line that was causing

flow loss. A programme of progressive cleaning was agreed by gradually increasing the interference between the pipe wall and the cleaning disc. However, as the condition of the pipe was unknown (it was feared that there may have been a very high build-up of debris), it was important that the cleaning/gauging pig

remained in the centre of the line. Although the pig was designed to run in a fixed-diameter pipeline of a nominal 36in diameter, the operator was not certain about the mechanical condition of the pipe. Should the pig encounter any pipeline defects along its journey, then the self-centring suspension system would be able to cope with the pipeline geometry.

Stable camera platform

Pipeline tools fitted with CMSS offer a high degree of repeatability with regard to running on the centreline, and this performance is even maintained when negotiating pipeline features such as small-diameter bends. 'Nose diving' due to the weight of the pig when running horizontally can be a problem in long dry pipeline runs: the force generated by the



Fig.2. The Asgard pig.



Fig.3. Pipeline cleaning pig, before...

.....and after.



suspension system is such that it is greater than the weight of the pig. By fitting a pair of CMSS modules, a stable horizontal camera platform can be obtained.

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The Ideas Workshop

First introduced in 2002, the workshop provides the opportunity to talk to PPSA about what you want of pigs in the future. A panel of experts will be there to field your questions, suggestions and observations.

If you have a topic for discussion, please complete the relevant section on the booking form. Alternatively, feel free to ask questions/make comments on the day.

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Delegate Fee: £305 per person, to include refreshments, lunch and end of day drinks, plus copies of seminar papers. (Discount available on block bookings. Please ask for details.)

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