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Maps supplied courtesy of INPEX Browse, Ltd

INPEX LNG FEED Success

Yokogawa Australia has been awarded a contract by INPEX Browse, Ltd. to perform front end engineering design (FEED) for an integrated control and safety system to control gas, condensate, and liquefied natural gas (LNG) facilities planned to be built in the Browse Basin off the coast of Western Australia and in the Northern Territory city of Darwin as part of the Ichthys LNG project.

The Ichthys LNG project is a joint venture between INPEX Browse, Ltd. (76%) and Total E&P Australia (24%). The

Ichthys field is located in the Browse Basin, some 150km off the coast of Western Australia. Discovered in 2000, it is one of Australia's largest undeveloped gas fields, with an estimated 12.8 trillion cubic feet of gas and 527 million barrels of condensate.

The Ichthys field's offshore facilities will consist of a large floating production platform and an associated FPSO for condensate processing and storage. These facilities will be connected via an 885km subsea pipeline to an onshore

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INPEX LNG FEED Success cont'd

LNG plant at Blaydin Point in Darwin Harbour. Two LNG trains are currently planned for the Darwin plant, and each would have a capacity of around 4.2 million tons per annum. The anticipated operational life of the project would be more than 40 years.

Yokogawa will supply engineering teams to work with the FEED contractors - AMEC in London for the offshore plant and JKC (a joint venture between JGC, KBR, and Chiyoda) in Yokohama, Japan for the onshore plant.

"We are very glad that INPEX Browse, Ltd. has recognised our extensive experience in LNG, from liquefaction through shipping to regasification terminals. We look forward to a long and rewarding partnership with INPEX Browse, Ltd.," said Satoru Kurosu, Senior Vice President of Yokogawa's International Business Headquarters.

INPEX Corporation of Japan has been actively involved in oil and gas exploration and production for more



than four decades and is currently involved in more than 70 projects in 26 countries. INPEX Corporation has been a key player in world famous LNG projects such as Bontang LNG and Tangguh LNG in Indonesia and is also currently involved in a number of oil and gas projects in

Australia and the Timor Sea Joint Petroleum Development Area. These projects include the Bayu-Undan LNG and condensate project, Darwin LNG, and the Griffin Fields project. INPEX Browse, Ltd. is a wholly-owned subsidiary of INPEX Corporation.

CENTUM enhancements provide greater productivity

Yokogawa has released CENTUM VP R4.02, an enhanced version of the company's flagship integrated production control system. A range of enhancements have been made, which provide users with higher levels of stability, reliability, and productivity.

This new version of CENTUM VP offers:

- enhanced information visibility
- a more intuitive and easier to use human machine interface (HMI) for operators
- improved consolidated alarm management. Alarm engineering will now be able to define operations such as monitoring and notification in the same engineering environment used to configure operations such as control and monitoring
- a new FOUNDATION™ fieldbus engineering function, which allows

full use of the intelligent capabilities of field devices. After data configuration changes are made to FOUNDATION fieldbus compatible sensors and final control elements such as valves, the system can now automatically check data. This improves the quality and efficiency of engineering work done in the field and saves time.

- closer linkage with the ProSafe-RS Safety

Instrumented System (SIS). It is now possible to operate and monitor this system and the CENTUM VP production control system through the same HMI, which improves safety and efficiency.

For further information about upgrading to this new version of CENTUM VP, contact your local Yokogawa branch.



May 10 – 11, 2010
Mark it in your diary!



User Conference in State of Excitement

The Yokogawa Australasia User Conference is back in 2010, and heading west for the very first time. Western Australia, promoted as the State of Excitement by the government, will host the conference on May 10 – 11, 2010.

The Conference will be held in the prestigious Perth Exhibition Convention Centre, overlooking the picturesque Swan River near the city centre.

Everything is happening in Western Australia at the moment – LNG mega projects, conventional oil & gas plays, downstream chemicals and new power stations. Yokogawa is participating in many of these developments, and it seems natural that the User Conference should also tap in to this high level of activity.

The User Conference has been scheduled to run over two days, with an action-packed program, including:

- Practical and useful applications
- Parallel sessions, so you can focus on areas of particular interest
- Short, highly focused presentations
- Workshop demonstrations and small discussions groups
- Maximum interaction for all delegates

The conference will be of interest to all users of CENTUM systems, ProSafe safety systems, SCADA systems, and Yokogawa field instruments. There is something of interest and value for everybody.

Call for presentations

Do you have an interesting application? Is there something unusual, quirky or unique about your plant? Have you overcome particular challenges? Do you have some tips that might help other users? Is there something about your installation that you're particularly proud of?

Submissions or ideas for presentations are welcomed from all users of Yokogawa products and services. Please submit an abstract or idea to Lindsay Hadland.

Yokogawa staff will be available to assist in the preparation and/or delivery of your paper on request. There will be a prize for the best paper and presenters receive complimentary Conference registration.

A formal agenda and registration form will be included in the Conference Brochure, which will be sent to *Connections* readers in March 2010. Until then, interested parties may contact Conference Organiser Lindsay Hadland by email on lindsay.hadland@au.yokogawa.com or by phone on (03) 8804 8813, or their local Yokogawa office, for further details.



Simulator will reduce costs at Liddell Power Station

Yokogawa Australia has been awarded a contract to build a simulator for Liddell Power Station, in the Upper Hunter Valley of NSW.

The simulator will enable the power station to train operators in all aspects of the plant's operation, replicate and investigate plant failures and test proposed plant modifications prior to implementation. It is expected to take 18 months to build.

"The most important feature of the simulator will be that it runs exactly the same software package as the real plant system - a CENTUM distributed control system installed by Yokogawa some years ago - and uses exactly the same configuration," said Richard Porter, Yokogawa's Simulation Group Manager.

"This makes the simulator the perfect test and training environment for the control system. To the eyes of the operator, the control system appears to be totally identical to the real plant with operations and alarm events requiring identical attention, making it a very useful training tool. Operators can be trained in every aspect of the plant's operation, even those that only occur infrequently."

Another significant benefit for the power station of utilising a simulator is that it will provide such a realistic representation of the plant that modifications to the control system are not

only tested on the simulator, they are commissioned on the simulator. This can reduce commissioning and implementation costs quite dramatically. Combined, these effects flow on to a reduction in plant downtime and significant savings in operating costs.

Yokogawa Australia is recognised internationally as a supplier of high quality simulators, having developed the technology that has become the industry standard. Since delivering its first simulator in 1985, the company has been commissioned to develop and install more than 30 projects around the world.

The Liddell Power Station is owned by Macquarie Generation, a state-owned corporation established in 1996 following reform of the NSW electricity system, and now Australia's largest electricity generator. The coal-powered station has four 500MW steam driven turbo alternators and each year produces approximately 10,000 GWhs of electricity, enough power for more than one million average Australian family homes.



Yokogawa's SCADA installed in the Persian Gulf

Yokogawa has successfully completed the main phase of a SCADA installation project for the Iranian Offshore Oil Company (IOOC) in the Persian Gulf. The system, which is based on Yokogawa's FAST/TOOLS in combination with STARDOM, will remotely control and monitor 16 production and 80 wellhead platforms from their onshore centres. The entire system has been designed for maximum operational reliability.

At each wellhead platform, STARDOM gathers field data and communicates it by radio to a FAST/TOOLS node at its associated production platform. There the data is consolidated and sent to a FAST/TOOLS server at the onshore centre via satellite data transmission or fibre optic. At the operations centre in Teheran the process and production information from all centres is monitored via satellite communication.

The project successfully addressed a number of challenges, including supply restrictions to Iran, a tight project schedule, changes in design due to the size of the platforms, heat dissipation and power consumption of the solar powered wellhead platforms and the engineering approval process.

The Factory Acceptance Test was performed in Yokogawa's Singapore office in two phases over a four month period. The systems were checked thoroughly to ensure that the time taken for commissioning was kept to a minimum - critically important because adverse environmental conditions in the region

and high transport and resource costs meant that the window for installation and commissioning was very narrow.

The first system shipment took place in March 2009 and the second shipment in July 2009.



Yokogawa systems are of the first water

The global desalination market is growing at a record rate, led by a sizeable surge in demand for seawater desalination, according to the International Desalination Association (IDA).

The Association released extraordinary figures at its World Congress held in Dubai in November. The total capacity of plants now online is 59.9m cubic metres per day (m³/d), a 6.6 million m³/d increase on last year. This represents the largest desalination capacity brought online in a single year, with 700 new plants commissioned around the world during that period.

With the IDA forecasting continuing dramatic growth in seawater desalination, Yokogawa is well placed to further develop its track record in this sector. For example, Yokogawa has recently been

awarded a contract by the Kuwait Ministry of Electricity and Water to replace the control systems for the boilers, distillation units, and auxiliary facilities at the Shuwaikh Seawater Desalination Plant. This plant is located on Kuwait's coast near Kuwait City. It has been in operation since 1953 and is a key part of Kuwait's infrastructure. With the ability to desalinate up to 90,000 tons of seawater each day, it accounts for 6% of the country's desalination capacity.

The project will to make this plant's operations more efficient and reliable by replacing the ageing control systems for the plant's three boilers, three distillation units, and auxiliary facilities. Work on the project will commence in February 2010 and is expected to be completed in 2012.



Island power

The largest power plant ever built in Trinidad and Tobago will feature a range of Yokogawa products and systems.

Yokogawa has received an order from MAN Ferrostaal Industrial Projects GmbH to supply an automation and control system for the La Brea Combined Cycle Power Plant that the firm is building for Trinidad Generation Unlimited (TGU). The plant is near La Brea, a town on the south side of Trinidad Island. With a capacity of 720 MW, it will have six gas

turbines, six exhaust gas heat recovery steam generators, two steam turbines, and auxiliary facilities. It is scheduled for completion in July 2011, to meet the country's rising demand for electricity.

Yokogawa will provide a range of systems and products including a CENTUM® series integrated production control system to control all of these facilities, the ProSafe®-RS Safety Instrumented System for detecting abnormal conditions and safely initiating

emergency shutdowns, the Exaquantum™ Plant Information Management System for recording and retrieving historical data, and the PRM™ integrated device management software package, as well as engineering and commissioning services.

The PRM software will remotely monitor the status of various types of plant measurement and control devices and execute diagnostic routines that detect potential faults before a malfunction can occur. PRM gives the plant operators a comprehensive overview of the measuring devices used throughout the plant.

Yokogawa won the project because of its extensive track record with combined cycle power plants, including a previous MAN Ferrostaal project - the Termozulia Combined Cycle Power Plant in Venezuela.



Port of Spain is the capital of the Republic of Trinidad and Tobago, the country's most highly developed city and home to its largest container port.



Product Releases

Advanced tuning capability now available for CENTUM

Yokogawa's csTuner, which diagnoses process data to improve the performance of business-critical production processes, is now available in Australia.

csTuner enables end users to accurately model both transient and noisy process data; it doesn't focus on any specific or average data, but looks dynamically at the data set across the operating range. This provides significant financial benefits, including:

- increasing throughput by up to 5%
- improving yields by up to 10%
- helping reduce energy consumption by up to 15%
- reducing production-related defects by up to 50%
- reducing wear and tear on process equipment.

The software was developed by American firm Control Station, based on its LOOP-PRO product suite and Non-Steady-State (NSS) Modelling Innovation, renowned for its ease of use. It integrates seamlessly with CENTUM CS3000, applying the standard tag structure to access critical loop information, including existing tuning coefficients, controller spans and the associated algorithms. While CENTUM has in built tuning



capabilities, csTuner offers more intuitive and advanced PID (proportional integral derivative) analysis and optimisation capabilities.

csTuner is now available as an option to all CENTUM users in Australasia. Call your local Yokogawa branch office for more information.

High Performance Oscilloscope Family

The Yokogawa DLM6000 mixed-signal oscilloscope is the flagship product in a new family of high-performance digital oscilloscopes featuring bandwidths up to 1.5 GHz, memory of 6.25M points per channel, an intuitive graphical user interface and a number of advanced analysis features.

The new oscilloscope family consists of five 4-channel models: the two DLM6000 mixed-signal oscilloscopes with 16- or 32-bit logic capability and bandwidths of 500 MHz and 1 GHz; and three DL6000 versions with bandwidths of 500 MHz, 1 GHz and 1.5 GHz, respectively. All the instruments have a maximum sampling rate of 5 GS/s, apart from the DL6154 1.5 GHz instrument with

10 GS/s. The 16/32-bit logic inputs on the DLM6000 Series models have a maximum toggle rate of 250 MHz or 100 MHz, depending on the probe used.

The new user interface makes the instruments very easy to use. It incorporates a new physical layout with backlit buttons, new on-screen visual elements including graduated menus, and innovative controls including a four-direction selector button and Yokogawa's unique 'jog shuttle' control.

The oscilloscopes offer an extensive range of capabilities for waveform characterisation, powerful tools for detecting glitches and anomalies, advanced signal enhancement and noise reduction technologies, and a range of options for serial-bus analysis and power measurement.

The combination of 32-bit logic inputs and four high-speed analogue channels makes the mixed-signal models ideal for the testing and debugging of embedded systems, while the built-in Windows connectivity along with a range of software drivers means these instruments can easily be integrated into automated test systems.

For more information, contact one of our Test & Measurement distributors. Go to www.yokogawa.com/au/cp/Network_locations/test_measurement.htm for contact details.



The Skangass Risavika LNG Plant in Tananger, (near Stavanger, Norway).

Photograph courtesy of Nordic LNG



LNG Operator Training Simulator

Yokogawa has received an order to supply an operator training system (OTS) for a natural gas liquefaction plant being built in Tananger, Norway.

The OTS is comprised of the Omega Land simulation engine and a safety and automation system (SAS), made up of the CENTUM VP Integrated Production Control System and the ProSafe-RS Safety Instrumented System. The OTS order has been placed with Yokogawa by Skangass AS, a joint venture between the Norwegian utility Lyse Gass and the finance firm Celsius Invest.

The new LNG facility will have an annual production capacity of 300,000 tons that will be supplied to customers throughout Scandinavia and the Baltic

region, commencing in 2010. A highly energy-efficient liquefaction process developed by Linde means that the new plant will produce much lower emissions than comparable facilities.

The OTS will use the same safety and automation system as the actual plant, with identical graphics and alarm behaviour. This high fidelity model of the LNG liquefaction process will behave exactly like the actual plant and allow plant upsets and equipment malfunctions to be simulated in an offline environment. This makes it possible for operators to repeat training so that they are always prepared for such situations.

According to Arne Sandstedt, Operations Manager at the Skangass LNG plant, the OTS will be instrumental in the training program for operators and contribute to safe start-up and efficient operation of the LNG plant. "Yokogawa has strong experience in LNG processes and their engineers understand our process. We look forward to completing the project and starting training."

John van der Geer, Manager of Yokogawa's Norwegian operations, added, "We are very pleased to expand our deliveries to Skangass. Since we already supplied the SAS and instrumentation, now with the OTS, the LNG plant will use nearly all Yokogawa products."

Yokogawa opens office in Townsville

As part of a series of steps that will enhance service for customers in Queensland, Yokogawa Australia has opened an office in Townsville.

A number of open days held in the new premises at 267 Ingham Road, Garbutt provided customers with an opportunity to visit the office, meet Yokogawa's Senior Sales Engineer, Kel Gillett, and see the company's latest products.

"Establishing an office in Townsville will allow Yokogawa to provide a superior service across the state," said Yokogawa's Director of Sales and Marketing, Russell Palmer. "Kel Gillett will continue to make regular trips to Mt Isa, to support our many customers there, in addition to being well placed to respond to the needs of customers in the 'tropical north'.



"Although the global financial crisis has resulted in some infrastructure projects being delayed or even cancelled," Mr Palmer said, "Yokogawa customers seem to be taking the opportunity to improve their operating efficiencies or overhaul ageing plant. That has resulted in an increased demand for Yokogawa products and technical services.

"In addition to opening the Townsville

office, we have also upgraded our premises in Gladstone recently," Mr Palmer continued. "Combined with our state head office in Brisbane, we have a team of very knowledgeable and experienced staff who are now well placed to respond to the needs of customers throughout Queensland."

Yokogawa's Townsville office can be contacted by phone on (07) 4779 9155 or mobile 0409 915 645.

News Tid Bits

Yokogawa Australia and Yokogawa New Zealand have donated more than \$45,000 worth of process control instrumentation to universities and TAFE colleges in Australia and New Zealand to assist in the training of the next generation of instrumentation technicians and engineers. The educational institutions that have received the Yokogawa instruments are RMIT in Victoria, Wagga Wagga TAFE in NSW, Challenger TAFE in Western Australia and Christchurch Polytechnic Institute of Technology in New Zealand. Yokogawa Australia's Sales and Marketing Director, Russell Palmer said that donations of this kind were an essential part of the company's corporate citizenship, giving apprentices and engineering students access to current technology so that they are abreast of the latest advancements in instrumentation.

Yokogawa has launched a Corporate Social Responsibility website, detailing the company's activities and achievements in the areas of environment, customers, employees and citizenship. Yokogawa's corporate citizenship is rooted in the company's philosophy of being pioneers and good citizens: the company sees its fundamental duties as going above and beyond benefiting society through its normal business activities and complying with the law - it is actively engaged in addressing serious social issues and regional revitalization efforts. For more information, visit the website at www.yokogawa.com/csr/index.htm

A 16-page, full colour short form catalogue of Yokogawa's portable test instruments will be published next month. The catalogue provides customers with detailed specifications on an array of multimeters, testers, power meter, calibrators and the like, as well as information about accessories and a full price list in local currency. To obtain a copy of the catalogue, send an email to paul.twigg@au.yokogawa.com in Australia or bill.farmer@nz.yokogawa.com in New Zealand with "Catalogue" in the Subject line.

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