East Java Gas Pipeline SCADA & Telecommunication System

by Ir. Harmansyah, PT Asia Karsa Indah

In April 1994, Baker CAC, a division of Thermo Instrument Controls Incorporated and PT Asia Karsa Indah, completed installing a turnkey SCADA and Telecommunication system in Indonesia to supervise, monitor and control the East Java Gas Pipeline. PT. Trans Java Gas Pipeline Company is the developer, with ARCO Bali North Inc. as the pipeline operator and Pertamina is the local agency representing the Indonesian Government.

This is a dry gas pipeline which delivers gas from the central processing plant at Pagerungan Besar Island via submarine pipeline to the onshore receiving facility at Porong and from there to seven other branch facilities. The gas pipeline facilities include pig launching and receiving facilities, slug catchers and associated pressure control valves, metering skids for total received gas and metering for all hydrocarbon outlets such as flare and blowdown lines.

Baker CAC and PT. Asia Karsa Indah provides complete engineering services for its SCADA application, the communication network and all necessary installation requirements.

The RealFlex Windows Software is used for the SCADA system. QNX, the fast responding operating system, provides the platform to efficiently manage I/O requirements, mandatory in the operation of a gas pipeline. RealFlex is a multi-tasking, multi-user SCADA package that handles all operations including alarming, reporting, event logging and historical data recording.

The SCADA system consists of a master station with nine redundant Baker 6532 Remote Terminal Units (RTUs) and one redundant local 6532 RTU. The master station consists of three consoles each with three computer stations. The CPUs are networked together using the ARCNET LAN. One of the CPUs is the designated 'primary' computer and the other 'secondary' computer. The secondary CPU is configured as a 'hot-standby' CPU. Two of the consoles are intended for operations and a third console will be used for engineering and administrative purposes. The master station is located at the onshore receiving facility at Porong.

The communication network design consists of redundant microwave and satellite based telemetry systems. Communication links are four-fold – one is a direct R-232 link to two local RTUs, a second is a link via satellite to communicate with the RTU at Pagerungan Besar Island 360 km away, a third is a point to point digital microwave link and the fourth is a point to multi point digital microwave link. The system is capable of up to sixteen individual communication paths.

The communication system includes a digital telephone system (DPABX), intercom, and alarm system at each RTU site.

Vacuum Pipelifters for Sumatra

by Klaas Boelema – Vacuumlift Australia

Vacuumlift Australia has completed a first shipment of 4 vacuum pipe handlers to the Mannesmann Nacap JV (MPCC Joint Operation).

The lifters are fitted to 22 tonne hydraulic excavators to handle the 710 mm (30 in) pipes for the PGN Gas Transmission Pipeline System on Sumatra.

The Vacuumlift equipment eliminates the requirement of dog-men to climb onto pipe trucks or stockpiles to fit slings or hooks. Therefore, it offers safer and quicker operation, as well as minimising damage to pipe coating.

Lifters being loaded in container at Vacuumlift Australia's production facilities in Perth, Western Australia.

Fracture Control in Gas Pipelines at the Australian Museum, Sydney 3 June 1997

by Leigh Fletcher – CRC Research Centre

Since the early 1960s the problem of long running fractures in gas pipeline has been largely solved by extensive research and experience based upon full scale tests. In recent years the advances in design prompted by economic benefits have led to a situation where designs are no longer so clearly underpinned by existing data. This is especially the case in Australia where high pressures, high strength levels and gases rich in higher hydrocarbons lead to the need for careful review. This review is being undertaken by Professor Brian Rothwell, who is on secondment to the Cooperative Research Centre as a Visiting Professor. The outcome will be captured in an internationally important seminar involving Brian together with Australian experts. The seminar will be chaired by Jane Cutler, Project Manager for the Eastern Gas Pipeline for BHP Petroleum.

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