

## Case Study Sheet



Sheet Ref: 09Q374

SCADA System Risk and Reliability Assessment

<b>Summary:</b>	The adoption of a SCADA (Supervisory Control & Data Acquisition) System constitutes a strategic initiative with significant impact on the Logistics, Transportation and Distribution (LTD) process. A radical change in the company's operation philosophy is implied as it introduces technological changes that force the company to comply with the PSM (Process Safety Management) requirements before operation begins.
<b>Asset Sector:</b>	Oil & Gas: Refined Product Pipelines, System Control and Data Acquisition (SCADA)
<b>PIMS Service Components:</b>	Strategic Planning, Asset Performance Evaluation Reliability Methodologies, Data Gathering, Review & Integration, Criticality Assessment Support Services, Operational Effectiveness
<b>Customer:</b>	Latin America Operator
<b>Customer Brief:</b>	Migration from manual to automatic operation requires that all potential hazards and their associate impacts are identified and assessed in order to ensure that all the necessary risk mitigation measures are available before the pipeline transportation system operation philosophy is modified. A project considering the required tasks and activities shall be developed, focusing on the assessment of hazards linked to operational changes and of pipeline system reliability and safety when operated with the SCADA system.
<b>PIMS Approach:</b>	The SCADA implementation strategy started in 2007 and was to be finished by 2014. This meant that the SCADA risk and reliability study had to be carried out parallel to implementation, enabling compliance with most of the startup requirements established by the PSM. PIMS broke down the work required into separate tasks and began the assessments on systems that had available approved for construction (APC) data. These systems were subject to 'What If?' and Failure Mode Effects Analysis (FMEA) assessments to check threats and consequences, while at the same time the PIMS team worked on the customer personnel aspect of the project. Assessing the skills and qualifications of the current SCADA operators and performing a gap analysis with the 'best-in-class' industry standards for operators. Once this was complete PIMS identified the requirements to bring the current operators in-line with the 'best-in-class' and designed training programs tailored to fit each operator and skill level. Other tasks completed by PIMS included a physical security assessment of the two SCADA Control Centers, and Hydraulic Analysis under steady and transient conditions. The Hydraulic Analysis used current pumping equipment features, land profiles, hydraulic gradient and conditions to establish the maximum operating pressure (MOP) that ensures safe and efficient conditions, while the physical security assessment would ensure the completed SCADA system could rely on reasonable protection to allow operational continuity.
<b>Project Outcome:</b>	PIMS provided rolling assessments, keeping track with the SCADA implementation validating that all in-scope aspects of the SCADA system will operate according to the best practices, complying with applicable standards and regulations and meeting operational expectations.
<b>Project Reference:</b>	To discuss this Case further with the end-user, please first liaise with PIMS of London.