

CASE STUDY: OIL & GAS

PIPELINE, INDIA



GAIL (India) Limited is a government owned natural gas explorer and producer responsible for natural gas processing and distribution in India. Headquartered in GAIL Bhawan, New Delhi, its operations are overseen by the Ministry of Petroleum and Natural Gas. GAIL owns and operates a network of around 13,722km of natural gas pipelines and currently executing around 8,000km of pipeline projects as part of the National Gas Grid.

Background

The customer required a proven intrusion detection system to identify and locate third party tapping or tampering attempts along two separate sections of LPG pipeline measuring approximately 86km and 60km in length. The solution was required to provide real-time security and monitoring of and along the pipeline including a right of way, as well as identify, locate and classify events with sufficient precision for the operations team to prevent any damage.

Requirements

- ✓ Detect, identify, and locate third party intrusion and fluid leaks
- ✓ Seamless integration with existing PISM system
- ✓ Detect manual digging (+/- 10m), moving vehicles (+/- 10m), excavator (+/- 20m)
- ✓ High detection and accuracy with Low Nuisance Alarms
- ✓ Cost effective for both installation and ongoing maintenance
- ✓ Intrinsically safe - no power in the field
- ✓ Immune to RFI/EMI and lightning

Our Solution

Multiple FFT Secure Pipe dual channel controllers were installed to monitor the pipelines and meet the customer's stringent requirements. Capable of monitoring 55 km in each direction from a controller port, the solution also easily accommodated minimum optical fiber power losses. FFT's graphical user interface (FFT CAMS) could also generate information about event classification, time and location. Options to acknowledge and customize event/alarm based on time averaging was also available.

Customer Response

To test the effectiveness of the intrusion detection solution, GAIL undertook rigorous Site Acceptance Testing (SAT) during which random intrusions were conducted along the pipelines. During testing, intrusion alerts were conducted along the GAIL Jaipur Loni pipeline section in Jaipur as well as in Delhi/NCR region of the pipeline. FFT Secure Pipe successfully detected all intrusion alerts, with the customer signing off acceptance testing on-site.

