

TRACETEK ACID LEAK DETECTION SAFEGUARDS SULPHURIC ACID TRANSFER PIPING

PROJECT DETAILS

Location:	Harima & Toyo Smelters, Japan
Completion Date:	April 2007
Contract Scope:	Design of system, supply components, installation by local partner Kohgiken
Applications:	Acid Leak Detection System
Technology:	Acid Leak Detection sensing cables and monitoring solution



KEY CHALLENGES

Concentrated sulphuric acid is delivered via barge to a company owned dedicated wharf. Acid is transferred several hundred meters from the delivery barge to storage tanks within the company owned facility. The transfer piping crosses one semi-public road and crosses over other people's property. Client is concerned about damage and safety risk from any acid leak occurring in transfer piping.

SOLUTION

nVent Industrial Heat Tracing Solutions provided the solution with its TRACETEK acid leak detection system. At the heart of this system is the TT7000 acid sensing cable which will quickly react to the presence of concentrated H_2SO_4 or HNO_3 . Because the transfer piping is exposed to rain, the cable must not react to water. TT7000 meets these criteria. When it is monitored by TTSIM (Sensor Interface Modules), the TT7000 cable can survive outdoors in wind, sun and rain without any false alarms, yet when it is contacted by concentrated sulphuric or nitric acids, the special electrode coating reacts to the acid and the system is able to report that a leak has been detected AND report its location to ± 1 meter.



TRACETEK TT700 in a wrap suitable for areas of high sunlight / UV



TRACETEK cables can detect the presence of water-based solutions containing corrosive or toxic chemicals.

PRODUCTS

Client has installed TT7000 at three projects. Two at Harima smelter and one at Toyo smelter. Total cable installed is about 2.6 km using 2 TTDM-128 control panels and a total of 13 sensor interface modules TTSIMs (Average of 500 meters of sensor cable per circuit). The cable has made several detections and several 30 m sections have been replaced after leak detection or heavy exposure to acid fumes or mist.

BENEFITS

- Installing leak detection sensors allows early detection of acid leaks and spills, thus minimizing the risk for damage to people, plant or property.

TRACETEK sensor cables for acids and aqueous chemicals are targeted at hazardous fluid stored in tanks and transported through systems of pipes and valves.



Until the development of cables capable of detecting strong acids, methods of sensing leaks have been limited and piecemeal. Visual inspection has been the most useful strategy for above ground and overhead transport pipelines and containment tanks, aided by colourchanging paints and dyes.

The advent of acid detecting cable, used in conjunction with real-time monitoring instrumentation, now provides an early warning system that works equally well in a whole range of environments. These include overhead piping, vertical pipes, valves, manifolds and other fittings where concentrated sulfuric or nitric acid could leak. Sensing cables can also be used on floors, in drip pans, in sumps, in trenches and underground in slotted conduit. They may be pulled into double wall containment pipes or tanks to monitor interstitial space.

A system built around strong acid-detecting cable provides low cost, round-the-clock monitoring that aids a quick response, limiting exposure to environmental damage, interruption to service and expensive clean-up.

Further information is available in our White Paper on Acid Leak Detection, ask us for a copy.

North America

Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nvent.com

Europe, Middle East, Africa

Tel +32.16.213.511
Fax +32.16.213.604
thermal.info@nvent.com

Asia Pacific

Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nvent.com

Latin America

Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nvent.com



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