



Heat Tracing on Phenol Pipeline

Freeport, Texas, USA

The organic compound phenol must be heated above 54 °C (130 °F) before it can be transported through pipelines in a liquid state. When a customer wanted to ensure their phenol pipelines would flow smoothly and continuously, they selected heat tracing from Pentair and Distributed Temperature Sensing (DTS) from AP Sensing.

A single AP Sensing DTS device was installed to monitor the full 1.2 km phenol pipeline. The DTS unit was securely installed in a remote control room. The fiber optic sensor cable was installed under the pipeline insulation along the full length of the pipeline.

So that operator could view the system status remotely from multiple locations, the AP Sensing configuration and control software was installed on three different, networked computers. A standard Modbus interface was utilized to report alarms to the SCADA system.



Chemical plant, Freeport, Texas

Given our pipeline monitoring experience, AP Sensing was selected to design and commission the system. Fiber optic-based DTS systems are ideally suited for thermal monitoring of heat tracing systems, as proven by an incident in 2015. A lightning strike took out the grid that supplied power to the heat tracing system, causing the pipeline to cool down and the phenol to solidify.

However, the AP Sensing thermal monitoring system was used to carefully monitor the warm-up process and avoid undue thermal pipeline stress. Receiving 24/7 information about the thermal condition of the pipeline, costly downtime and reparations could be avoided.



Phenol transport pipelines with heat tracing

AP Sensing's experienced project engineering team, working together with our expert worldwide partner Pentair, assisted with the installation and commissioning plans including configurations. AP Sensing also provided operator training onsite.

The features and benefits of the phenol pipeline heat tracing and thermal monitoring systems were clear from the beginning; however, the added value that this DTS system provided after the power outage is what really impressed our clients. After this incident, plans were put in place to add additional monitoring solutions.

Valuable assets were protected, and employee safety levels were increased thanks to AP Sensing's Distributed Fiber Optic Sensing (DFOS) solution and the expert design, integration and commissioning of this complex project.

