

A NEW HEAT MANAGEMENT SYSTEM TO GUARANTEE CRITICAL TEMPERATURE MAINTENANCE ON PHENOL TRANSFER LINES

PROJECT DETAILS

Client:	Dynea Sp. z.o.o
Location:	Trzemeszno, Poland
Completion Date:	2012
Contract Scope:	System design, Pre-fabrication of insulation and outer casing, Installation, Start-up support, Commissioning
Applications:	nVent RAYCHEM 12XTV2-CT-T3 self-regulating heating cable, Complementary components for power connections, splices and end seals, 2 x nVent RAYCHEM NGC-20 advanced field-mountable electronic temperature control systems, RAYCHEM Supervisor software
Technology:	Electric heat-tracing, Control and Monitoring systems



KEY CHALLENGES

The existing Heat Management System on a 120 metre high-level pipeline transferring phenol from storage to the production plant had become ineffective. Phenol solidifies at 42°C and changes its chemical properties above 82°C. It is therefore critical that temperatures, typically between 62° and 65°C, are maintained during transfer.

With ambient temperatures ranging between -25°C and +30°C, the challenge was to guarantee temperature maintenance within this tight band. In addition, the new system had to be installed as fast as possible, to minimise downtime while the plant continued to operate.

SOLUTION

nVent office in Warsaw designed and installed a new system based around the company's RAYCHEM self-regulating heating cables. Some 177 metres of cables were deployed along the pipeline and insulated with 50mm of mineral wool. The self-regulating heaters sense and respond to actual conditions along the pipes. This ensures that variations due to static fluid and differing elevations are accommodated.



Local control and central monitoring - RAYCHEM NGC-20



Self-regulating XTV cable

Two RAYCHEM NGC-20 units were installed to offer the benefit of localised control. They constantly monitor the integrity of the heating circuits and feed status information to a central location. RAYCHEM Supervisor software provides a graphic interface. The NGC-20's 'smart' control has proved so effective that Dynea have been able to lower the operating temperature to 52°C, further reducing maintenance costs.

Installation time was reduced dramatically by prefabricating the Paroc mineral wool insulation and its zinc-plated covering in 'half-shells'. Despite testing working conditions, installation was completed in just eight working days ensuring minimal disruption to Dynea's manufacturing process.

The result is a Heat Management System that is guaranteed constantly to maintain the temperature of the phenol within the pipeline.

BENEFITS

- Self-regulating technology guarantees tight temperature maintenance
- nVent RAYCHEM XTV cables allow high-temperature steam cleaning
- RAYCHEM NGC-20 provides local control and central monitoring
- 'Smart' control enables lower operating temperatures and reduced maintenance
- Prefabrication cuts time on site



A complete nVent has overcome problems on a critical process transfer line at Dynea Sp. z o.o.'s specialist resin production plant in Trzemeszno, Poland.

The 17-year old plant produces industrial resins for use as binders mainly in the production of mineral wool insulation.

Dyneia is a world-leader in creating high value adhesion and surfacing solutions for the wood processing and construction industries as well as for selected industrial applications. The company has 36 production plants and some 2100 employees in 23 countries in Europe, the Asia Pacific region and Brazil. For further information, visit www.dynea.com.

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