

## CEPSA Phenol and Acetone Project

### PROJECT DETAILS

<b>Client:</b>	CEPSA (Compañía Española de Petróleos, S.A.U.)
<b>Location:</b>	CaoJing SCIP, Shanghai
<b>Completion Date:</b>	June, 2014
<b>Contract Scope:</b>	Engineering Design, Material Supply, Installation Supervision and Commissioning for the Electrical Heat-Tracing System
<b>Applications:</b>	Temperature Maintenance and Pipe Freeze Protection for Chemical Pipes and Vessels
<b>Technology:</b>	Raychem Self-Regulating and Mineral Insulated Heat-Tracing Systems, and NGC-30 Control and Monitoring System



### KEY CHALLENGES

The CEPSA Phenol and Acetone Project Team required a Heat Management System provider to implement a more comprehensive solution to meet the strict mix of Process Maintain and Freeze Protection requirements, as well as the extreme exposure temperature conditions at the Shanghai SCIP job site. With a 60 km complex piping route, over 80 km of heat tracing cable and 75 control and power distribution panels were required to create a heat-tracing system that provided tighter control, limiting downtime repairs and providing the ability to withstand high temperature exposure conditions in excess of 600°C.

### SOLUTION

Pentair Thermal Management's overall solution included the use of NGC-30 controllers that employ a centralized multi-circuit control and monitoring system to configure/control the distributed heat-tracing circuits respective of process maintain or freeze protection requirements. Key data such as temperature, ground-fault current, operating current, and voltage are monitored through panel-mounted touch screens. NGC-30 controllers provide immediate access to key process

maintain and freeze protection data. Additionally, field maintenance engineers are able to check the circuit on/off status via a lighted end seal kit above the insulation, or conveniently browse information remotely from a workstation with pre-configured supervisory control and monitoring software.

The bulk of the technology for the CEPSA Phenol and Acetone Project utilized the Raychem Self-Regulating Heat Trace technology. The Pentair design team also utilized mineral insulated (MI) heating technology, which met the need for specific exposure temperature conditions and paired well with the NGC-30 control methodology.

## PRODUCTS

To meet the needs of this challenging application, Pentair Thermal Management offered a Heat Management System which included:

- Self-Regulating Heating Cables
- Mineral Insulated Heating Cables
- Above-Insulation Connection Kits
- NGC-30 Control and Power Distribution Panels

## BENEFITS

- Raychem Self-Regulating Heating Cable technology, paired with the NGC-30 controllers, substantially reduced the energy consumption with accurate power output to minimize the heat loss of the pipes and vessels.
- Centralized control and monitoring system provided information on the status of heat-tracing circuits, failure alarms, minimum/maximum values of temperature etc. Better reporting enabled predictive maintenance which reduced the TOC of the plant and improved its performance.
- The broad range of PTM technologies afforded CEPSA the opportunity to utilize heat-tracing technology that met the requirements of their high-temp exposure conditions.

With decades of experience in designing, manufacturing and installing heat management systems, PTM was able to provide a comprehensive solution to CEPSA's unique needs. The use of multiple heat tracing technologies, a unique controller platform that allows for better energy utilization, and a more reliable heat-tracing system substantially reduced operations and maintenance requirements.

Pentair Thermal Management provides unique solutions for various applications and offers a full suite of optimization strategies customized for a given application resulting in reduced CAPEX/OPEX for the project.



[WWW.PENTAIRTHERMAL.COM](http://WWW.PENTAIRTHERMAL.COM)

### NORTH AMERICA

Tel: +1.800.545.6258  
Fax: +1.800.527.5703  
Tel: +1.650.216.1526  
Fax: +1.650.474.7711  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

### EUROPE, MIDDLE EAST, AFRICA

Tel: +32.16.213.511  
Fax: +32.16.213.603  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

### ASIA PACIFIC

Tel: +86.21.2412.1688  
Fax: +86.21.5426.2917  
[cn.thermal.info@pentair.com](mailto:cn.thermal.info@pentair.com)

### LATIN AMERICA

Tel: +1.713.868.4800  
Fax: +1.713.868.2333  
[thermal.info@pentair.com](mailto:thermal.info@pentair.com)

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