

nVent RAYCHEM Heat Management Solutions Provide Critical Operational Reliability for Large Midstream Terminal Facility Converting to Biofuels Production

Mission Critical Solutions in Biofuels



PROJECT DETAILS



Location:
Northeast USA



Applications:
Pipe Freeze Protection, Process Temperature Maintenance, Longline Heating



Contract scope:
Engineering and Product Supply



Technology:
nVent RAYCHEM Self-Regulating w/ High Power Retention (HTV), Power Limiting (VPL), Mineral Insulated (MI), Advanced Control & Monitoring



Completion date:
2022

KEY CHALLENGES

In the Oil & Gas market, stages of production typically fall into Upstream, Midstream and Downstream. Upstream extracts feedstocks used to produce fuels and petrochemicals. Midstream moves and stores feedstocks and finished products. Downstream processes crude oil and natural gas into finished products. One of the largest Midstream infrastructure and logistic solution providers in the USA is making the environmentally conscious choice of shifting its terminal facilities from petroleum-based production to biofuels production. Why? They are committing to energy solutions that create less CO₂, like biodiesel, ethanol and Sustainable Aviation Fuel (SAF). This conversion requires multi million-dollar terminal retrofits. This customer converted several of their terminal facilities to enable the aggregation, storage, blending and distribution of biofuels, mainly biodiesel. All totaling up to 5,000 miles of pipeline and 130 liquid petroleum terminals. Typical terminal production operation for petroleum-based products, like diesel and gasoline, do not require supplemental heat tracing so areas like piers, jetty's, tankage, blending and interconnecting piping have limited power distribution capacity. However, production operation of biodiesel, ethanol and SAF does require heat tracing. For example, Biodiesel (B100) requires a process maintain temperature of 110°F (43°C). The customer's mission critical objectives for the heat management solution include finding the optimal yet cost-effective system design for this project that would keep critical processes running and manage the additional demands for power distribution in the terminal areas like piers, jetty's, tankage, blending and interconnecting piping.

SOLUTION

nVent RAYCHEM engineers analyzed all possible heating technologies and the availability of power distribution to determine the most cost-effective heating management solution. After all systems were analyzed, the nVent RAYCHEM Variable Power Limiting technology (VPL-4) powered at 480V proved to be the ideal solution for longline heating, interconnecting piping and vessel heating. Variable Power Limiting (VPL) heating cables offer great features, such as ease of design and cut-to-length installation. However, most important to the customer was that the long circuit length capability of nVent RAYCHEM VPL-4 at 480V reduced the circuit count and addressed the challenge of limited power distribution in piping and vessels in areas of the terminal. In addition, nVent RAYCHEM self-regulating and mineral insulated heating cables proved ideal for the other shorter or higher temperature lines that required process temperature maintenance or freeze protection. Finally, to ensure the reliability and successful operation of the critical processes, we installed our advanced control & monitoring solutions to deliver energy savings, to minimize operational risk and maximize productivity, and to communicate with the operation staff.

PROJECT FACTS

To meet the mission critical needs of this Large Midstream Terminal Facility, our nVent RAYCHEM heat management solution included:

- Engineering design experts providing optimized design and support using TracerLynx 3D HMS Software
- nVent RAYCHEM VPL-4 at 480V power limiting heating cable for longline heating
- nVent RAYCHEM HTV self-regulating heating cable
- nVent RAYCHEM XMI mineral insulated heating cable
- nVent RAYCHEM 920 control and monitoring system

BENEFITS

We met the customers' mission critical objective for keeping critical processes running with our optimized designs and proven complete heat trace solutions. nVent RAYCHEM VPL-4 at 480V heating cable is designed and supplied for ease of installation, process maintain capabilities and long circuit length capability. This longline heating solution addressed this facility's requirement for flow assurance of the biofuels, while working with the limited power distribution situation in the terminal areas. Our solution assures flow maintenance which is critical to the success of Biofuels production. Our nVent RAYCHEM 920 advanced control & monitoring solution delivers energy savings and full connectivity that minimizes operational risk and maximizes productivity.

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



Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER