

nVent RAYCHEM Heat Management Solutions Provide Critical Operational Reliability for 80 Million GPY Nebraska Greenfield Renewable Diesel Project



Mission Critical Solutions
in Clean Fuels


PROJECT DETAILS


Location:
Hastings, Nebraska



Applications:
Pipe Freeze Protection, Process Temperature Maintenance



Contract scope:
Engineering and Product Supply



Technology:
nVent RAYCHEM Self-Regulating (XTVR, HTV), Power-Limiting (VPL), Mineral Insulated (XMI), Advanced Control and Monitoring



Completion date:
2025

KEY CHALLENGES

A joint venture, between a local US fuel distributor and a major agricultural company, is constructing a new greenfield 80-million gallon per year refinery in Hastings, Nebraska. This new renewable diesel refinery will utilize beef tallow and plant oils as the primary feedstocks, which will arrive at site via rail and truck transport. As is the case with any major projects – keeping costs under control and meeting budget are priorities to this new joint venture, and building a greenfield refinery will be a challenge to all involved partners. Recognizing the opportunity, the nVent RAYCHEM team engaged early in this project, in fact, almost 2 years before the shovel turning ceremony. The nVent RAYCHEM team focused on the complete Heat Management System (HMS) and demonstrated the necessary engineering capabilities to this new joint venture very early in the project cycle, allowing the partners to develop confidence in nVent RAYCHEM as the HMS supplier of choice.

SOLUTION

With the project data available, nVent RAYCHEM estimating and design engineers analyzed and optimized all possible heat management opportunities, including power distribution, heating cable technologies, control and monitoring, connection and communication options, and thermal insulation. nVent presented the complete heat management system package to the client partners on this project, and after numerous meetings, received the award for engineering and product supply for the project. The partners were impressed with the capabilities of TracerLynx 3D HMS design software and the high power retention (HPR) capabilities of nVent RAYCHEM XTVR and HTV self-regulating heating cables. As a new project, the focus in the heat management solution is around total installed cost and energy savings; and as a new biofuels project, the nVent RAYCHEM team clearly demonstrated their expertise of process temperature maintenance of the unique feedstocks that will be used at this facility. Operational reliability is key and nVent's ability to provide ongoing life cycle support for this facility was considered a high value.

PROJECT FACTS

To meet the mission critical needs of this new biofuels refinery project, our nVent RAYCHEM heat management solution included:

- Engineering design experts providing optimized design and support using TracerLynx 3D HMS Software
- nVent RAYCHEM XTVR and HTV self-regulating heating cables with HPR technology
- nVent RAYCHEM VPL power-limiting heating cable
- nVent RAYCHEM XMI mineral insulated heating cable
- nVent RAYCHEM NGC-30 control and monitoring system
- nVent RAYCHEM Supervisory Software to provide connect and communication requirements

BENEFITS

Building a new biofuels refinery comes with risks and the partners of this project chose to minimize the heat management system risks by awarding the design and supply of heat management to nVent RAYCHEM. nVent also plans to pursue the construction of the heat management system demonstrating our capability as a heat management turnkey solution provider. In the interim, optimized design has begun utilizing TracerLynx 3D HMS software and product solutions including RAYCHEM XTVR and HTV high power retention (HPR) heating cables. nVent RAYCHEM's unique HPR cables, are applicable to high temperature applications and will retain optimum power output for a design life of over 30 years. Our NGC-30 advanced control and monitoring solution will deliver energy savings and full connectivity to this project minimizing operational risk and maximizing productivity. Control and monitoring will also support unloading and distribution systems which is critical due to the nature and variability of these feedstocks.

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