Decarbonisation through innovation

Explore some of the latest available sustainable technologies

Empowering mission-critical applications in LNG, biofuels, hydrogen, and carbon capture facilities

In the realm of mission-critical applications, particularly within industries such as LNG, biofuels, hydrogen, and carbon capture, the importance of precise and reliable heat management cannot be overstated. nVent Raychem TracerLynx 3D heat management system design software stands as a pinnacle of technological innovation, offering comprehensive solutions that cater to the stringent requirements of these sectors.

Advanced design capabilities

The TracerLynx software is renowned for its advanced design capabilities, which enable engineers to take advantage of all attributes of 3D models in the design of heat management systems. This precision gained through the use of these model attributes is crucial in applications where temperature control is vital for safety, efficiency, and operational integrity. TracerLynx utilises the customer's 3D master plant model data, leveraging the benefits of the 3D model environment throughout the front-end planning, detailed engineering, procurement, construction, start-up, and operation phases.

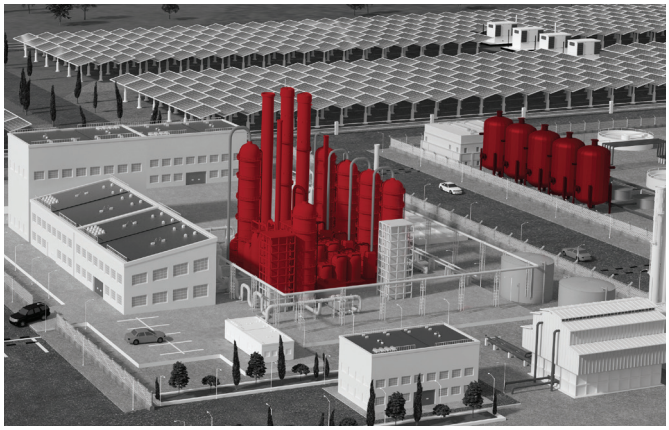

Figure 1 The TracerLynx 3D heat management system offers comprehensive solutions for LNG, biofuels, hydrogen, and carbon capture facilities

The software allows users to visualise complex piping, equipment, and instrumentation, ensuring that every component is correctly integrated into the overall system. Integration of structural steel, power, and instrument cable trays and area classification breaks provide the comprehensive detail required to mitigate risks and prevent potential failures that could compromise mission-critical processes.

Customised solutions

One of the standout features of TracerLynx is its ability to provide customised solutions tailored to the specific needs of each application. For liquefied natural gas (LNG) facilities, where cryogenic temperatures are a constant challenge, the software supports specialised designs that ensure optimal insulation and temperature maintenance. In biofuels and hydrogen production, where precision heating is essential for chemical reactions and process stability, TracerLynx enables targeted solutions that enhance productivity and safety. Similarly, in carbon capture facilities, the software allows for the intricate heat management required for efficient CO_2 separation and storage.

Efficiency and optimisation

Efficiency and optimisation are at the core of the TracerLynx software's functionality. The software not only assists in the initial design phase but also plays a crucial role in ongoing system optimisation. Our proprietary TracerLynx heat mapping technology allows engineers to determine and consider a facility's trace heating loads in sizing and optimally placing transformers and power distribution/control panels early in the design phase. During detailed engineering, the overlay of structural steel, power, and instrument cable trays, in addition to the pre-located transformers and panels, provides further optimisation within the 3D environment, resulting in substantial power distribution savings and total installed

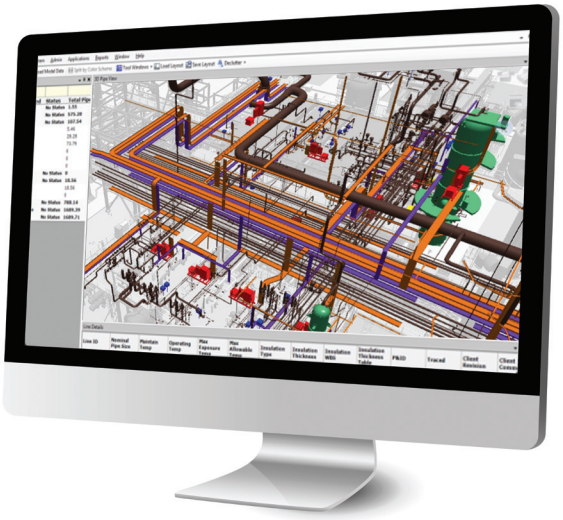

Figure 2 TracerLynx is renowned for its advanced design capabilities

cost (TIC). Additionally, the software's intuitive interface and automation capabilities quickly identify scope additions and engineering change, reducing engineering time and eliminating human error during the critical project engineering and execution phases.

Enhanced safety and compliance

Safety is paramount in mission-critical applications, and TracerLynx excels in ensuring compliance with industry standards and regulations by utilising Smart Scripts. This software feature helps engineers to design within safety guidelines and avoid potential hazards in the design phase. For example, in LNG facilities, where the risk of gas leaks and explosions is a constant concern, TracerLynx provides safety checks and balances in the design phase to minimise these risks. By adhering to stringent safety protocols, the software helps facilities maintain compliance with regulatory requirements, thereby safeguarding personnel and assets.

Scalability and flexibility

TracerLynx is designed to be scalable and flexible, accommodating the evolving needs of large-scale industrial projects. It is fully compatible with customer 3D modelling systems, enabling global work sharing through regional engineering teams with concurrent multi-user access and is a fully integrated single database system. The software can quickly identify the impact of piping and process changes, providing customers with the most efficient and accurate electrical heat tracing (EHT) system design and reducing TIC (inclusive of the costs associated with power distribution materials and construction labour).

Whether a facility is expanding its operations or integrating new technologies, the software can adapt to changing requirements. This scalability ensures that the heat management system remains robust and effective, regardless of the size or complexity of the application. nVent maintains a full-time software development team dedicated to enhancing the flexibility of TracerLynx. This ensures seamless integration with other systems and technologies into the future, further enhancing its utility in diverse industrial environments.

Advanced Work Packaging

TracerLynx supports Advanced Work Packaging (AWP) to aid in safety, labour efficiencies, and equipment and material management throughout the entire project work cycle. TracerLynx allows for easy segmentation of the work in alignment with the project execution schedule and execution work fronts (modular scopes, stick-built scopes, and multiple contractor scopes). The benefits of AWP include up to a 25% increase in field productivity and a 10% decrease in TIC through site schedule optimisation. The utilisation of TracerLynx AWP for EHT projects results in predictable schedules, reduced site rework, and enhanced safety performance.

Conclusion

In conclusion, nVent Raychem TracerLynx 3D heat management system design software is an invaluable tool for engineers working in LNG, biofuels, hydrogen, and carbon capture facilities. Its advanced design capabilities, customised solutions, efficiency optimisation, safety features, and scalability make it a cornerstone of mission-critical applications. By leveraging the power of TracerLynx, facilities can achieve greater reliability, safety, and efficiency, ultimately driving success in their respective industries.

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