CASE STUDY | GEM™

OIL & GAS REFINERY

Texas City, USA

PROJECT BENEFITS

- Significant improvement in steam trap reliability
- Increased efficiency of 35%
- Decreased maintenance and replacement costs
- Enhanced safety by eliminating discharge of live steam
- Reduced steam consumption and proportionate GHG emissions

Rail Car Heating System Faster & Cleaner with GEM™ Traps

The oil and gas exploration facility uses steam as the primary means of transporting energy from a central boiler plant to the point of use. During production, rail car heating stations bring asphalt from ambient temperature to 300°F. Once at temperature, the asphalt is of a low enough viscosity to be transferred from the rail cars into storage tanks. Steam is used throughout the terminal for trace heating purposes with the process consuming several tons of steam per hour.

GEM™ Tested Against Thermodynamic Trap

The facility was using mechanical traps that were failing within as little as a couple of days. Thermal Energy International (TEI) engineers performed an initial trial comparing a new thermodynamic trap against a specially sized GEM™ Steam Trap on two separate tank cars, in an effort to reduce maintenance and replacement costs and improve trap reliability.

Tests Demonstrate Faster Warm-up

After installing the trial GEM Trap, the steam to the tanks cars was then turned on and temperatures were taken at intervals over the course of 22 hours. Results demonstrated that the GEM Traps allowed the rail cars to heat up faster and more uniformly. Functional Steam Loss Tests were also performed on trace heating lines, and the GEM Trap proved to be 35% more efficient.

GEM™ Results Leads to Project Expansion

The refinery retrofitted 10 rail car stations and was so pleased with the results that the company has subsequently ordered GEM Traps for over 60 additional stations as part of an upgrade and expansion. In 2010, they retrofitted the entire site to GEM Traps, which have all been operating without issue ever since.

*"**The traps have been working flawlessly**, the only work we have to do is when they periodically clog from material pushed into them from tank car steam coils. As a matter of fact, the current request [for more GEM Traps] is being generated as a result of their quality and durability."*

- Maintenance Superintendent

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GEM STEAM TRAPS