



KNPC SHUAIBA REFINERY

Kuwait



Benefits

- Reduction of 85 psig in HP hot condensate header pressure
- Elimination of 10 % annual steam trap failure
- Sufficient steam pressure to refinery's extremities
- Minimal production upsets
- 1,750 mechanical traps replaced by GEM Traps

GEM® Traps Retrofitted to Steam Pipe Work

Keeping on top of the constant challenge of repairing and replacing thousands of mechanical steam traps is no longer a problem following the successful conversion of 1,750 mechanical traps to GEM Traps. In addition, the refinery has seen the high pressure (HP) hot condensate header pressure drop from highs of 175 psig to just 90 psig.

Located some 50 km south of Kuwait City, the facility occupies an area of 1.3 km², producing approximately 30 types of light, medium and heavy petroleum products.

As is the case in oil refineries worldwide, steam is the primary means of transporting energy from the numerous boilers and steam generators to the point of use. Steam is used throughout the oil refinery for applications ranging from trace heating systems designed to keep the product at the correct viscosity to large reboilers consuming many tonnes of steam per hour. At the facility mechanical steam traps were failing at a rate of over 10 % per annum.

When Thermal Energy International was first approached, failed mechanical traps had caused the HP condensate return pressure to rise to 175 psig, preventing the 150 psig steam branch from being able to discharge. During a recent unplanned shut down, the refinery was able to run on just two boilers, which prior to the installation of the GEM Traps, would have resulted in a loss of steam pressure to the refinery's extremities as well as production upsets.

"Use of GEM Traps has resulted in an 85 psig reduction in the HP hot condensate header pressure as well as steam savings from the reduction in steam loss. In addition, GEM Traps are superior as only the strainers require maintenance."

- Engineering & Maintenance Manager



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