Enerflex in action

Pasadena, Texas, USA

Rotary screw compression project — rail car unloading

Experts in process design, Enerflex delivers crucial integration between existing systems and complex Siemens PLC program with reduced commissioning time.

Enerflex's customer utilized refinery grade propylene (RGP, also referred to as P/P mix) as a feedstock in the manufacturing of cumene.

Enerflex replaced redundant Frick units with two Howden WCV-204 compressors, driven by Siemens 200 HP motors producing 1,800 RPM.

These units unload liquid propylene and propane mixtures from rail cars by pressurizing vapour from the main storage tank into the rail cars and displacing the contents to the tank. A cyclical process recovers vapours from empty cars by reducing pressure inside them, condensing, and transferring the product back to storage, while controlling the pressure in the main tank at all times.

The system operates API 619 compressors, with API 614 lube oil system, including dual oil pumps, a single shell and tube oil cooler, dual oil filters, and insulation and heat tracing. The system incorporates drivetrain torsional and lateral analysis, suction scrubber, secondary coalescer for 1 PPM maximum oil carryover, and a Siemens S7 PLC control panel.

Outcome

The project was a close and successful collaboration between the operator and the Enerflex Calgary team. Software simulation tests were performed before the units were shipped from the Houston facility, minimizing commissioning delays. The system entails multiple operating modes along with compressor / valve configurations. Crucial integration between existing systems and the complex new Siemens PLC program were carried out by Enerflex.