Additive (DRA) dosing unit for high pressure pipeline

Client:
SLOVNAFT A.S., Mrs. Katarina Orianova, investment manager
Scope of works:
FEED and detail design, procurement, manufacturing, installation and start-up of the additive dosing unit
Period:
2019

Project details:

Slovnaft operates a product pipeline network of more than 800 km in Slovakia the pipeline connects 8 operational fuelling terminals. The operation of the pipeline is strategic for Slovnaft business, and historically an additive DRA, which is a resistance reducing agent has been used for many years, over time existing dosing units have become obsolete, and created significant operation reliability problems.

Duly Slovnaft awarded VAE CONTROLS the contract to replace the existing system, along with enhanced design to improve operational “Life Cycle” cost benefits. The new designed system is placed within a container ths allows for weather element protection, and safe location, inside the container the system consists of the additive skid dosing system, with a PLC controlled ‘Dosing Pump’ which allows very accurate adjustable injection quantities vs. pipeline product flow, the typical flow rate is 5 lph, high accuracy flow rate measurement is via Mass Flow Measurement. The unit is controlled by the DCS (distributed control system) located in the central pipeline control centre, and the additive controlled PLC is safely located in the substation, locally the operator can control the dosing unit by setting the flow rate using the supplied graphic interface panel using real time flow parameters (see attached picture). In addition within the container is the additive stainless steel storage tank, with a volume of 1.4 m^3, and to ensure the integrity of the additive the system includes a mixer/blender and additional truck unloading additive pump, doubling up as a circulation homogenisation unit. The DRA additive is directly connected via stainless steel piping to 3 pipeline branches for dosing, and operational section of the required branch for dosing is achieved by the operator activating the required branch solenoid valves.

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