

# Energy Transmission Company Leads Climate Action with Versatile, Zero-Emission Valve Operating System

## RESULTS

- Eliminated over 99% of actuation emissions from pipelines
- Reduced downtime and operator's learning curve
- Reduced costs for changes or additions to existing equipment



## APPLICATION

Valve operating system for mainline natural gas compressor.

## CUSTOMER

North American natural gas transmission and energy delivery company.

## CHALLENGE

To stay proactive with the EPA's tightened standards in its November 2022 "Quad Oc" proposal to reduce greenhouse gas emissions from oil and natural gas operations, the customer wanted to modernize its existing assets and invest in low-emission electricity for its compressor station, which also supports the customer's own sustainability goal of net zero emissions by 2050 and reducing emissions intensity 35% by 2030.

To minimize downtime and ensure maximum reliability, the natural gas transmission company wanted high comfort level with the operating system while meeting functionality requirements for Shafer Emergency Shutdown Schematic. Initially, following this functionality required changing their initial actuator's Programmable Logic Controller (PLC) to using 1 solenoid rather than 2.

*"The ECAT's intuitive, versatile design meets functionality requirements and sustainability goals."*



The ECAT VOS Power System

### SOLUTION

The customer chose the Shafer Emissions Controlled Actuation Technology (ECAT) as the valve operating system for their mainline compressor.

The ECAT, unlike most gas-powered actuators, eliminates over 99% of actuation emissions. An electro-hydraulic power pack reinjects the pipeline gas power source back into the pipeline, instead of venting the high-pressure gas into the atmosphere. The reinjected pipeline gas recharges itself for the next valve stroke. Zero emissions are released, supporting compliance with present-day climate legislation, and alleviating the intense pressure to adopt emissions reduction technologies.

Providing the customer high comfort level with the ECAT was possible due to its intuitive and reliable design. The ECAT uses many of the same control components as other Shafer gas-over-oil systems, which reduces the operator's learning curve significantly. The ECAT's simple bolt-on design is versatile and can be retrofitted on existing actuators and control systems, allowing the customer to repurpose existing equipment with minimum downtime and providing the customer's desired Emergency Shutdown Schematic functionality.

### RESOURCES

#### **Shafer™ Emissions Controlled Actuation Technology (ECAT)**

<https://www.emerson.com/en-us/automation/valves-actuators-regulators/hydraulic-actuators/shafer-ecat-emissions-controlled-actuator-technology>

#### **Brochure: Shafer™ ECAT**

<https://www.emerson.com/documents/automation/brochure-shafer-emissions-controlled-actuator-technology-ecat-en-2705374.pdf>

#### **ECAT Component Breakdown and Operation**

<https://www.emerson.com/documents/automation/brochure-shafer-emissions-controlled-actuator-technology-ecat-en-2705374.pdf>

#### **Shafer™ Actuation Solutions**

<https://www.emerson.com/documents/automation/shafer-actuation-solutions-en-5922766.pdf>