

#### **Automation | Valves | Measurement | Process Control**

Making Sense of Methane

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Environmental Solutions Leader



### Environmental Leadership – Vision / Mission



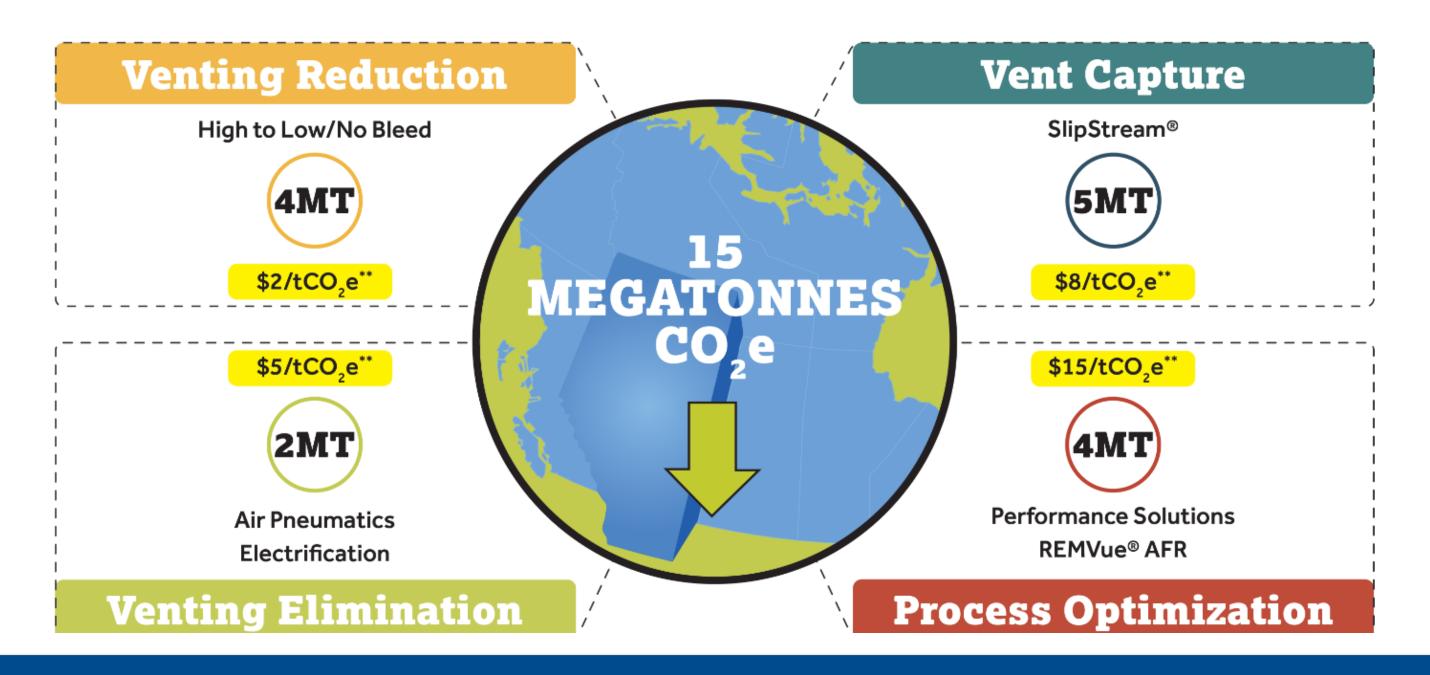
"Spartan Controls is committed to environmental leadership within our community, our business operations and the industries we serve through education and the application of best practices and technology."

- Effective management of energy, emissions and environmental performance are critical in driving costs down and meeting regulatory compliance requirements
- Together with our principals, Spartan strives to provide solutions that focus on further developing our customers' sustainability, profitability and improved environmental performance across all industries served
- Our focus on efficiency improvement, environmental leadership technology and compliance provides our customers with proven and "implementation ready" solutions to meet voluntary and regulatory emission reductions





## Environmental Leadership - GHG Emissions Reduction Potential





#### Barriers to Deployment and Potential Solutions to Overcome\*



Innovation Risk Adversity

Regulatory Waivers (for early actors)

Political Uncertainty

Relying on Baseline Emission Reductions

Lack of Collaboration "Different Priorities"

Disconnect Between Field Operations and Corporate Management

Limited Access to Remote Sites

Roadmaps for Reductions (Existing and Future)

Tailored Communications to Organization Structure (Field and Corporate)

Workshops / Roundtable
Discussions with Users

Build on Learnings

Project Economics / Technology Cost

Silo of Large Organizations Lack of Regulatory Clarity

Human Resource Constraints & Lack of Skilled Personnel

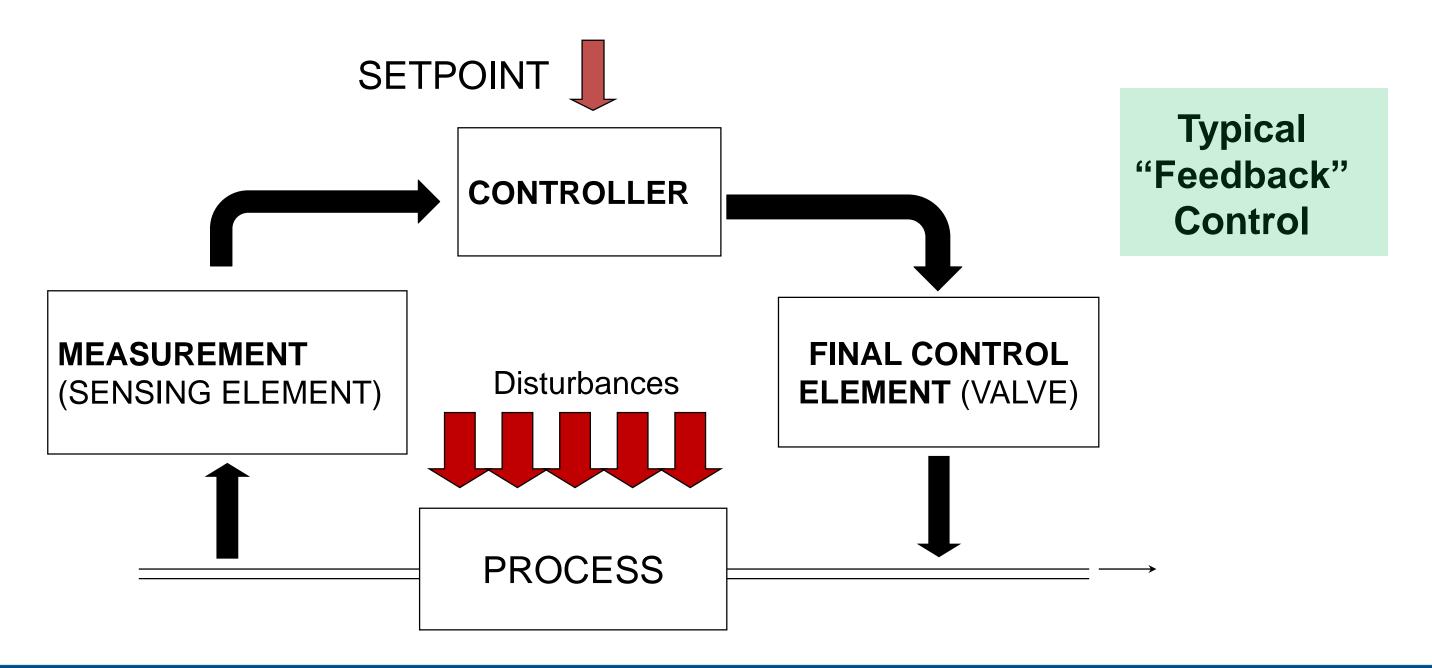
Understanding Cost of Non-compliance

Lack of financing / Capital Constraints

Narrow Viewpoint

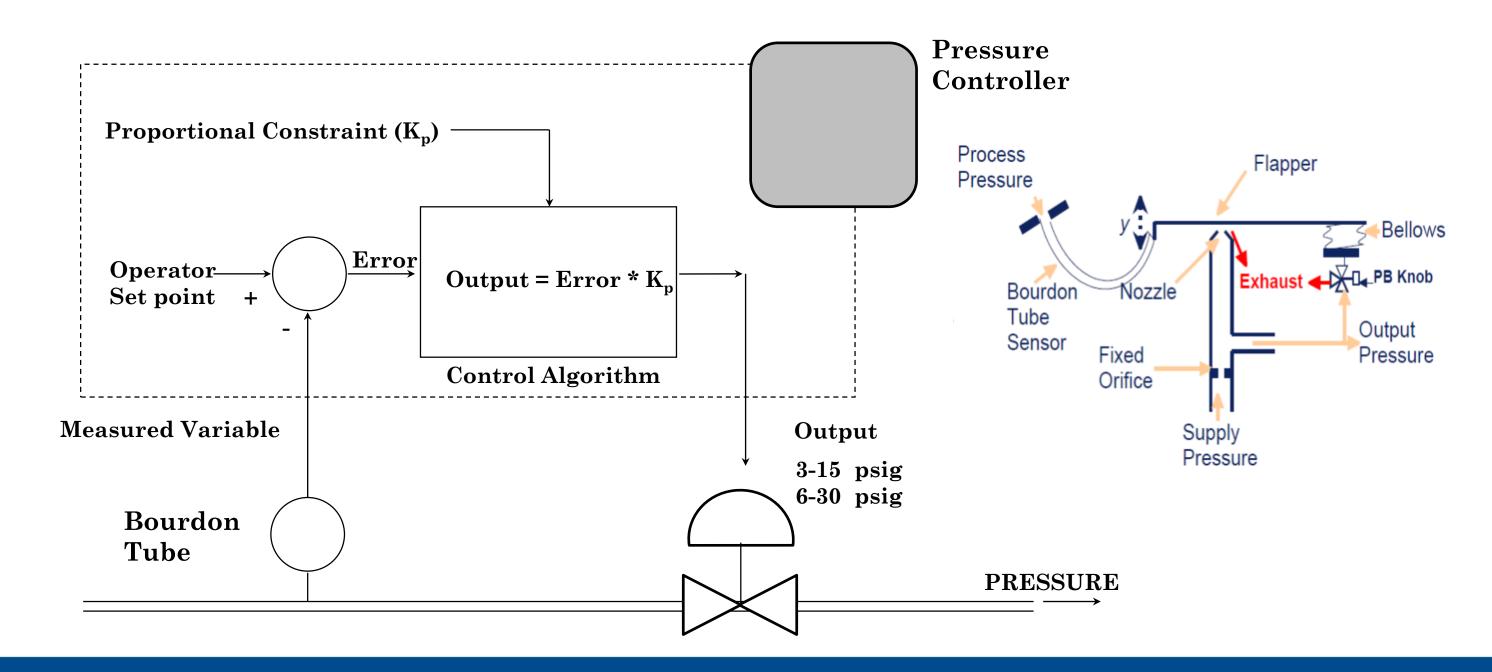


## **Control Loop Overview**



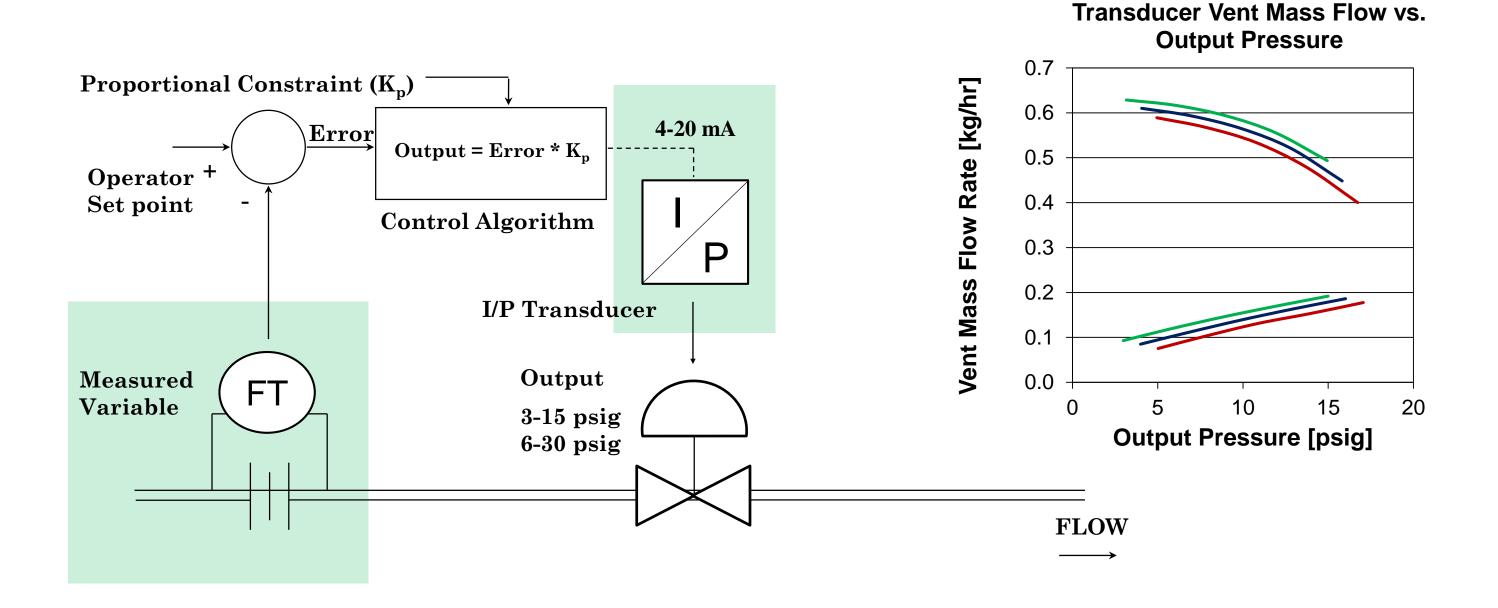


## Venting Reduction - Pneumatic Control Loops

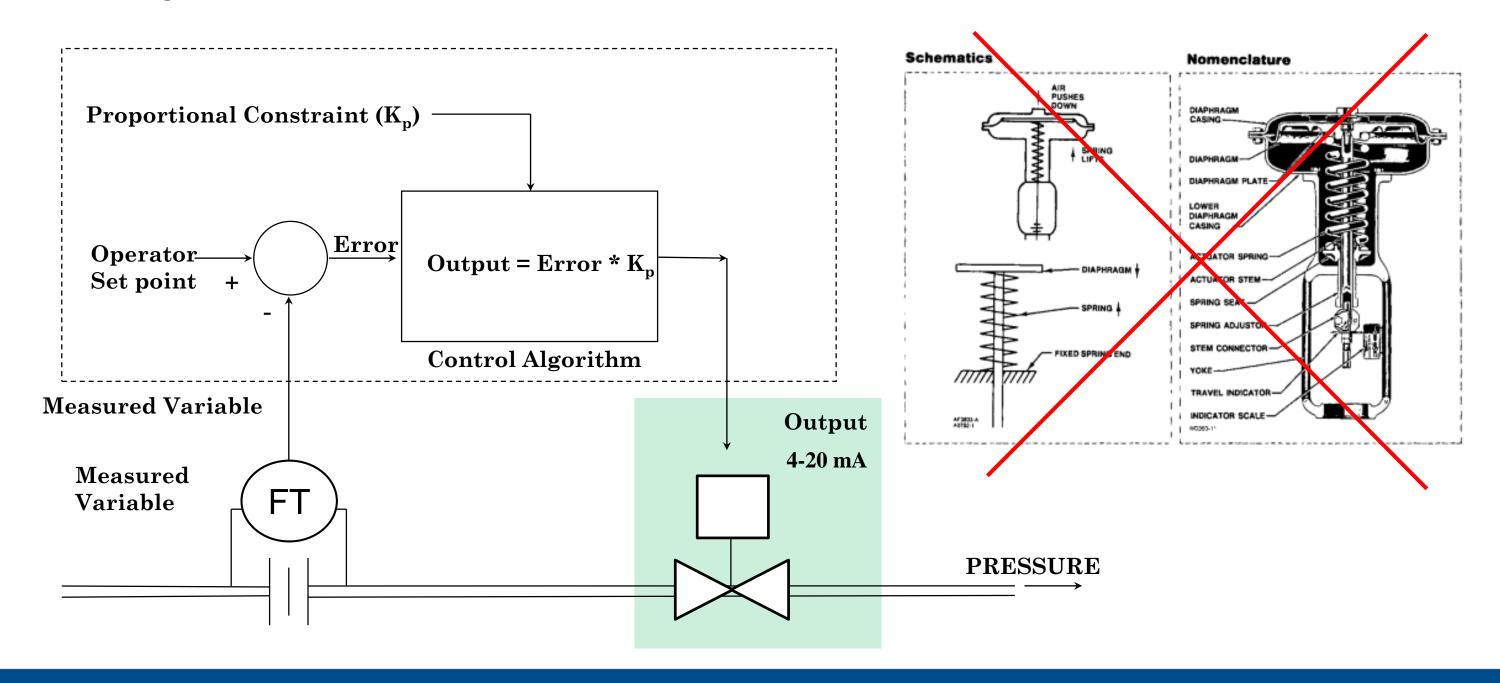




### Venting Reduction - Electro-Pneumatic Control Loops



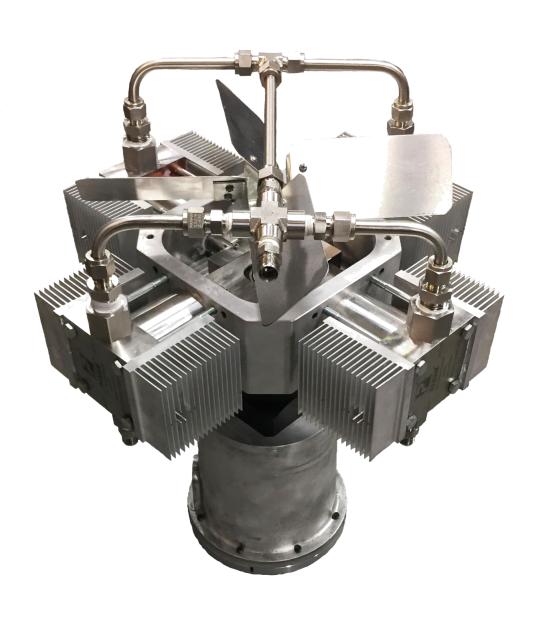
## Venting Elimination - Electric Control Loops





## Venting Elimination - Chemical Injection / Air Compression







## Venting Elimination - Remote Power Options

Grid





Fuel Cell

**TEG** 





Solar



## Process Optimization - REMVue® AFR



Rich-to-Lean burn conversion control system







Average fuel savings of 15%



## Vent Capture - SlipStream®



A system that captures normally vented hydrocarbons and uses them as supplementary fuel





Another means of achieving venting elimination



## Incentives and Regulations - Carrots and Sticks





#### Contact Me

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join the conversation













# THANK YOU

NATURAL GAS WORLD