



Meter Set Design

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Agenda

- Introduction
- Basic Overview
- Forms of Overpressure Protection
- Design and Layout Considerations
- Fabrication
- Questions

Introduction

Cost Effective Corrosion Bypass Standardization

Leaks

Available Space Capacity Overpressure Protection

Accuracy Testing Failure Mode

Install Time Efficiency

Isolation Safety Maintenance

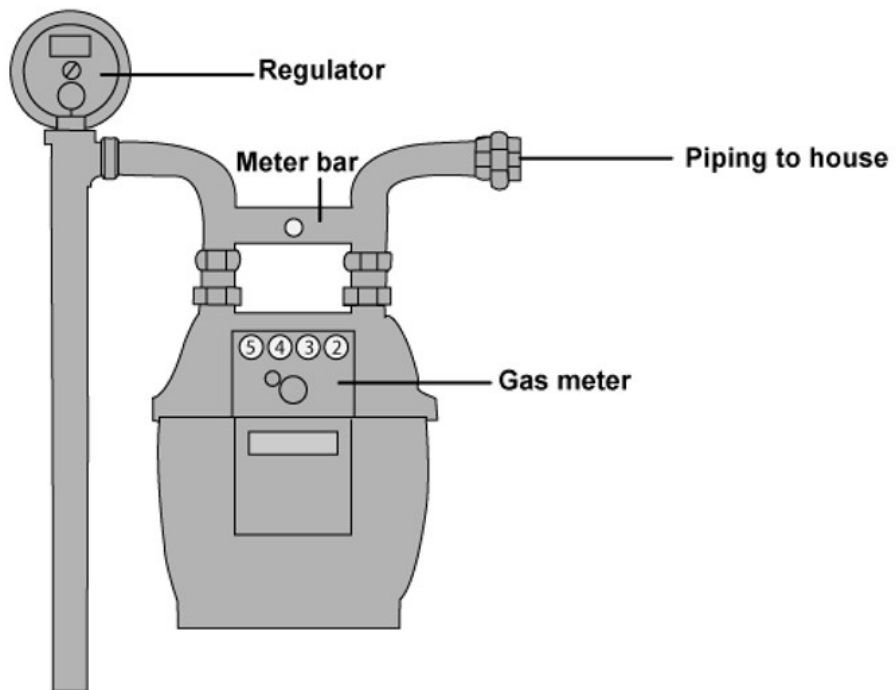
Documentation Noise Reliability Notification

Aesthetics

Take A Look Around



Basic Overview



Ideal Meter Set Design

It depends

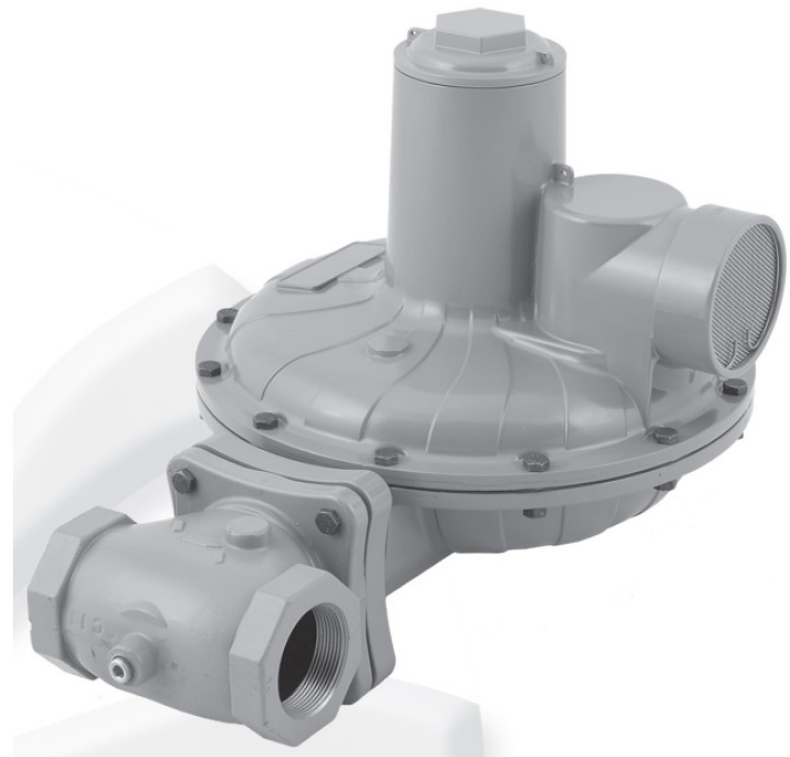
What Are We Trying to Avoid



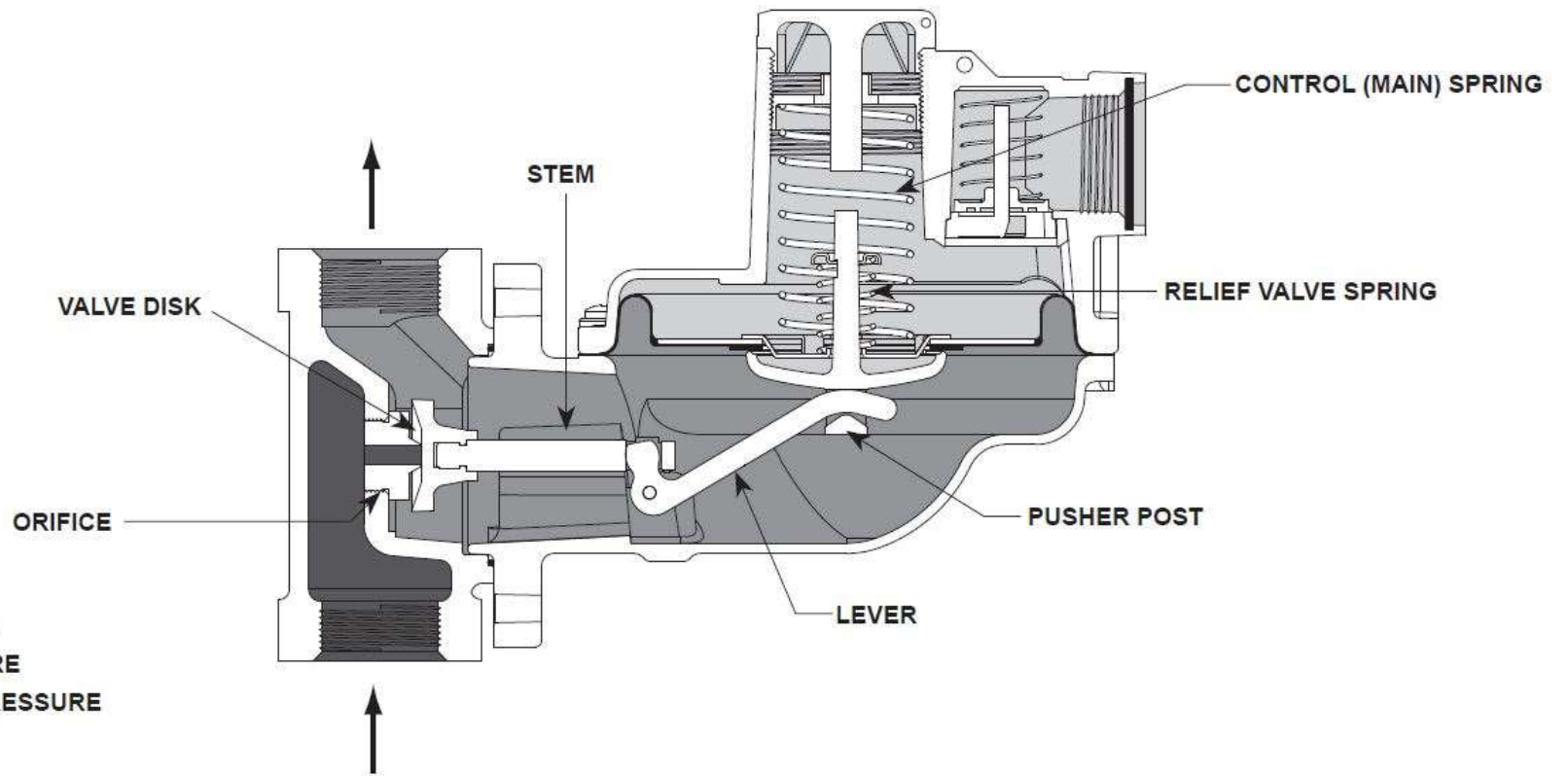
Forms of Overpressure Protection

- Internal Relief
- External Relief
- Monitor
- Slamshut

Internal Relief



Internal Relief



Internal Relief

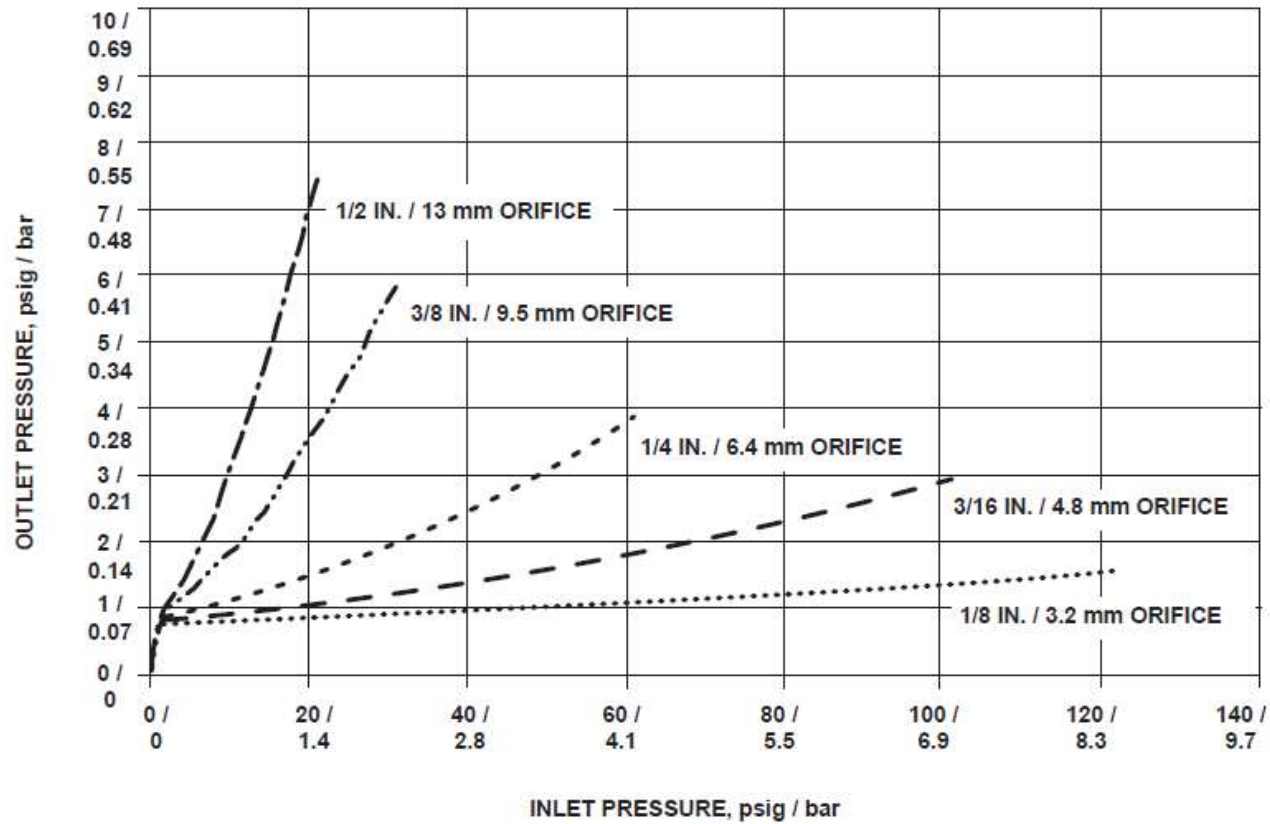


Figure 3. 7 in. w.c. / 17 mbar Setpoint Relief Curves (with Lever Disconnected, No Vent Piping and 3/4 or 1 NPT Vent)

External Relief



- Relief installed downstream of the regulator and vents to atmosphere
- Relief is sized for the fail capacity of the regulator

Monitor Setup



- Two regulators in series both sensing the same downstream pressure
- Monitor or is set to a higher pressure to take over in a worker failure



Monitor Setup

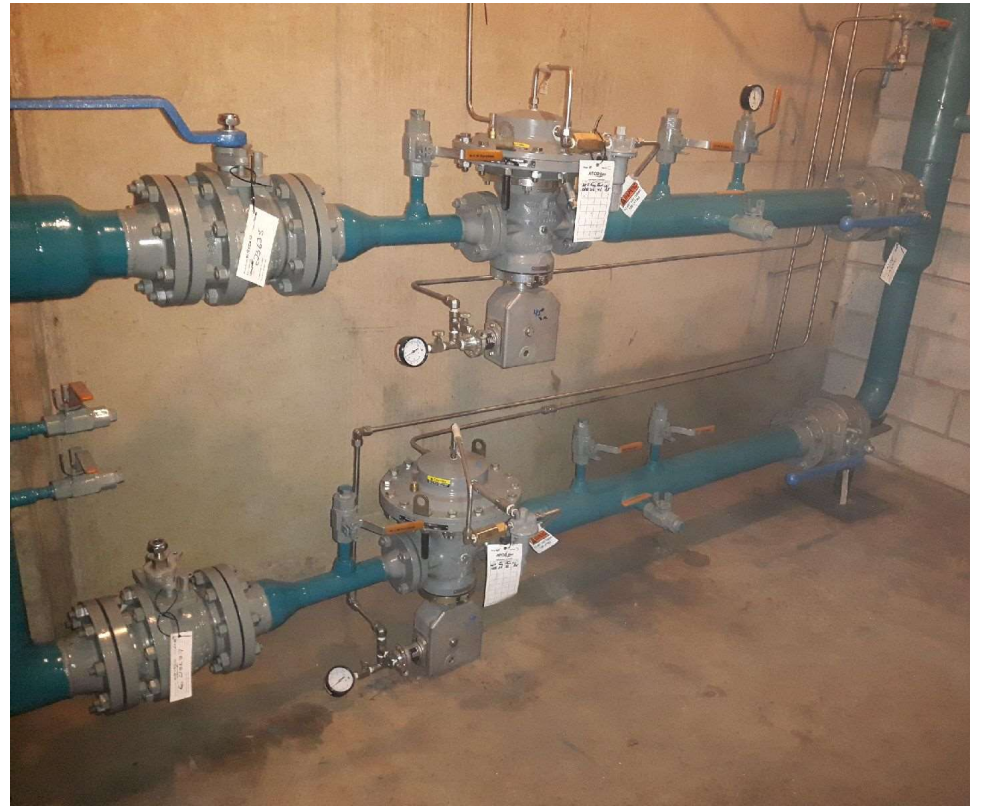


Slamshut



- An internal or external device which senses downstream pressure and independently from the regulator blocks flow
- Set to a pressure higher than the regulator and manually reset once tripped

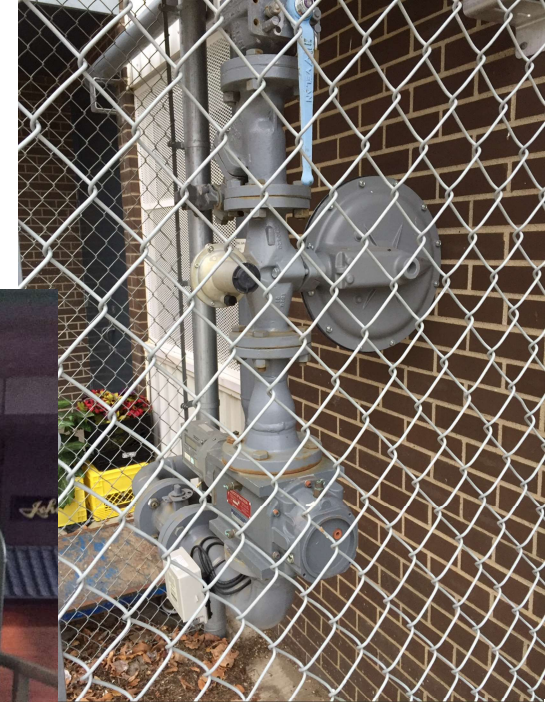
Slamshut



Design and Layout Considerations

- Location
- Alternate Runs
- Bypasses
- Noise
- Standardization

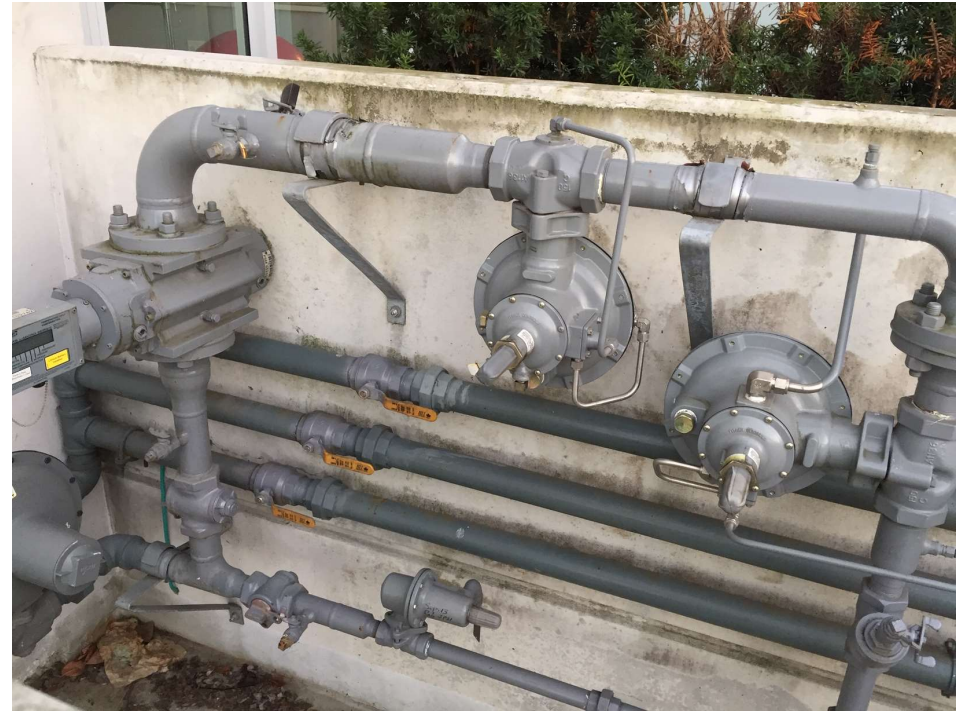
Location



Alternate Runs



Bypasses



Tubing Full Port Isolation Valves For Testing and Troubleshooting

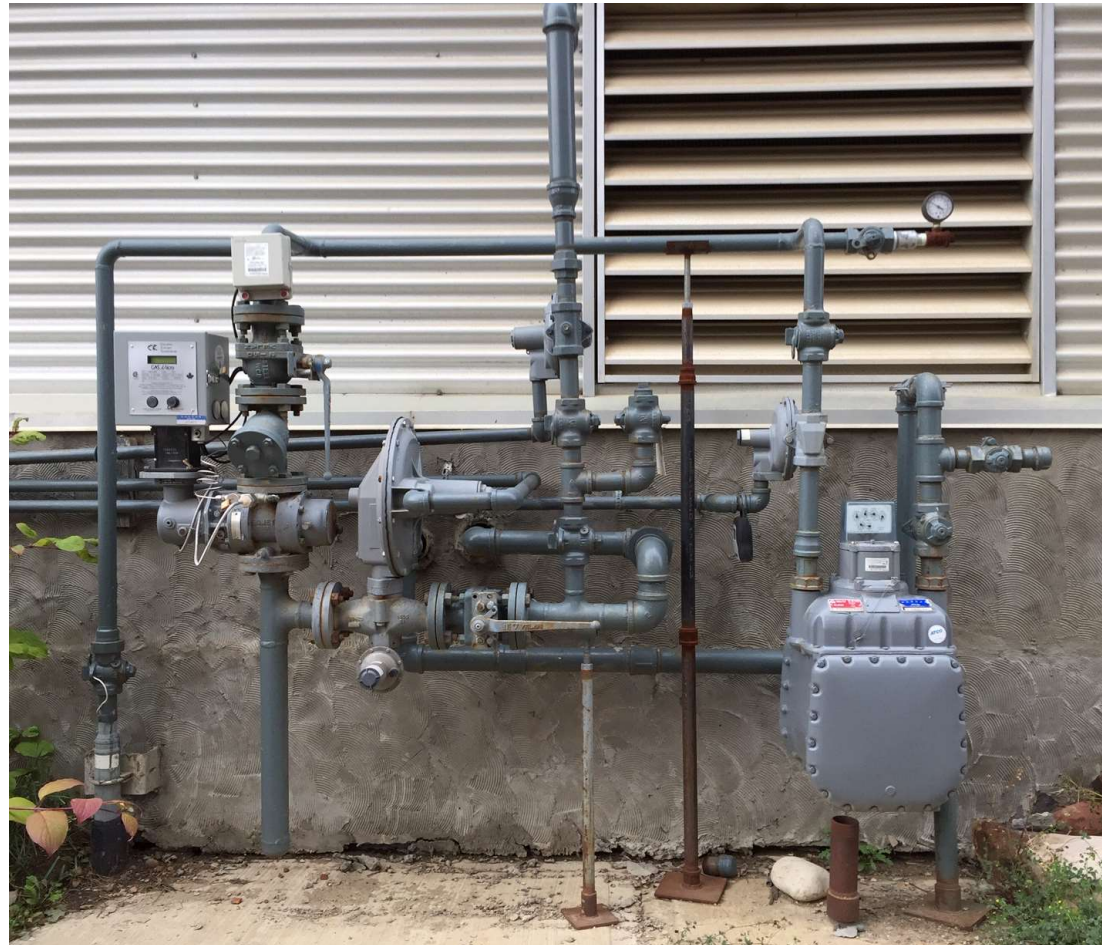


Noise

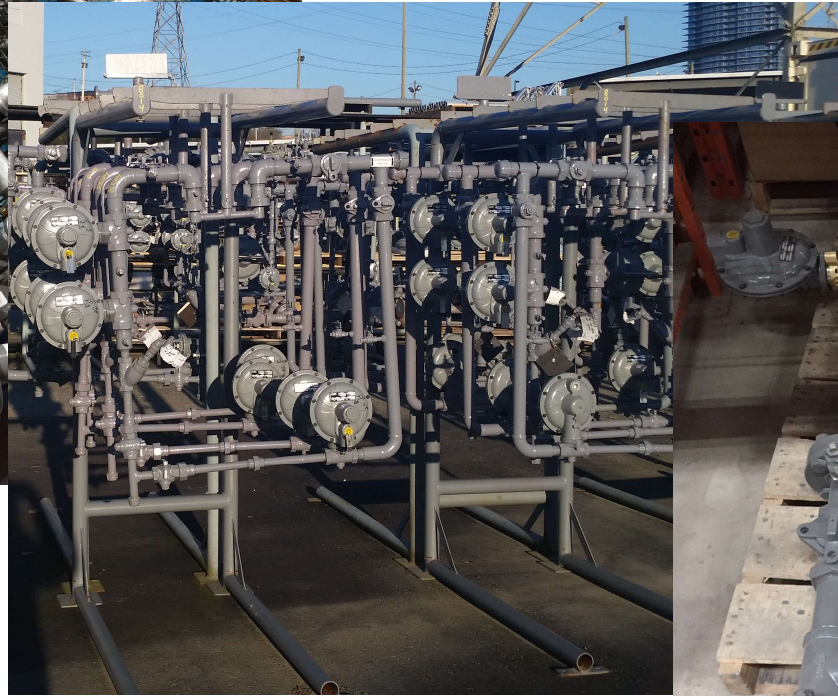
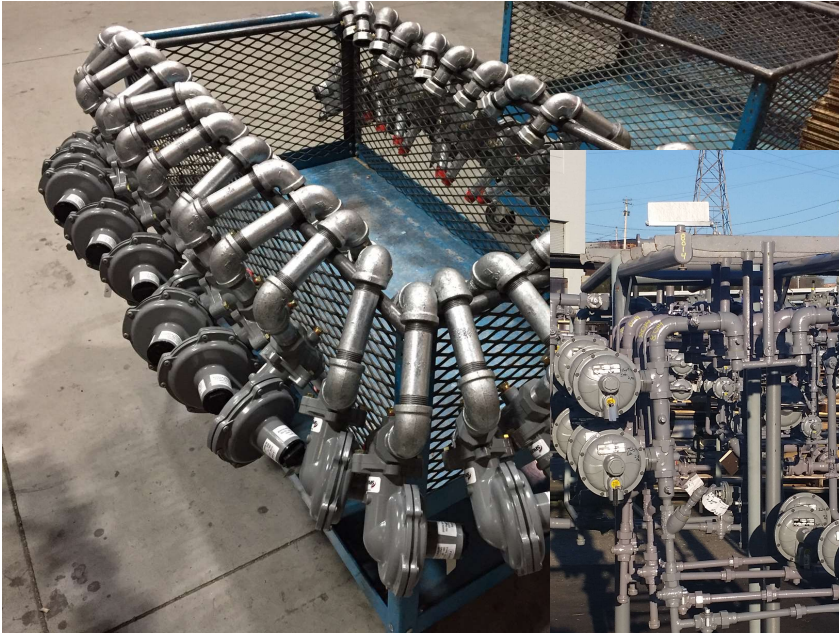
- Make flow paths as straight as possible
- Eliminate unnecessary bends
- Expand downstream piping to reduce velocities



Standardization



Fabrication



Questions?