

The background of the slide features a close-up, high-angle view of a complex valve assembly. Several large, hexagonal nuts are visible, secured to a metal structure. The lighting is soft, highlighting the metallic textures and the intricate geometry of the components. A thin, solid green horizontal line spans the width of the slide, positioned above the main title.

# Pipeline Mainline Valve Site Overview

David Chittick, P.Eng

# Outline

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Safety Moment

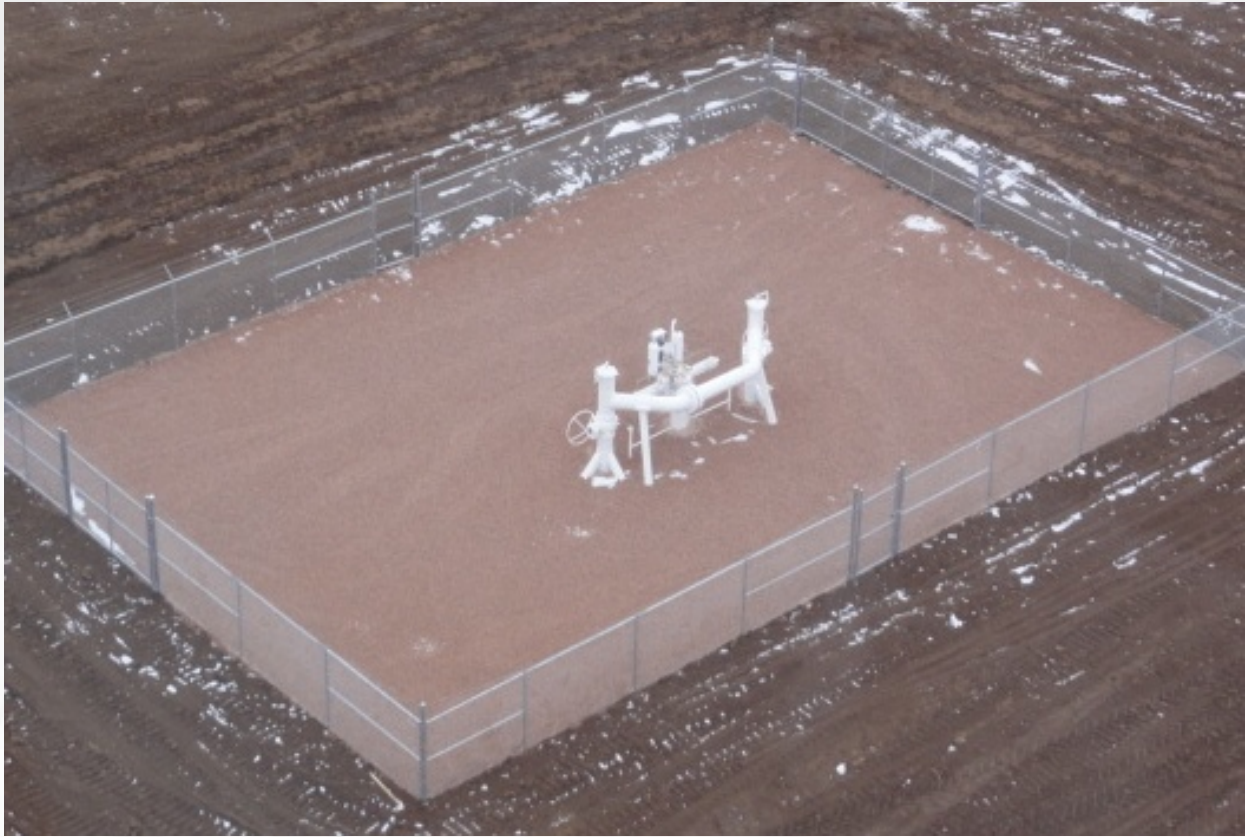
Mainline Block Valve Sites

Valves

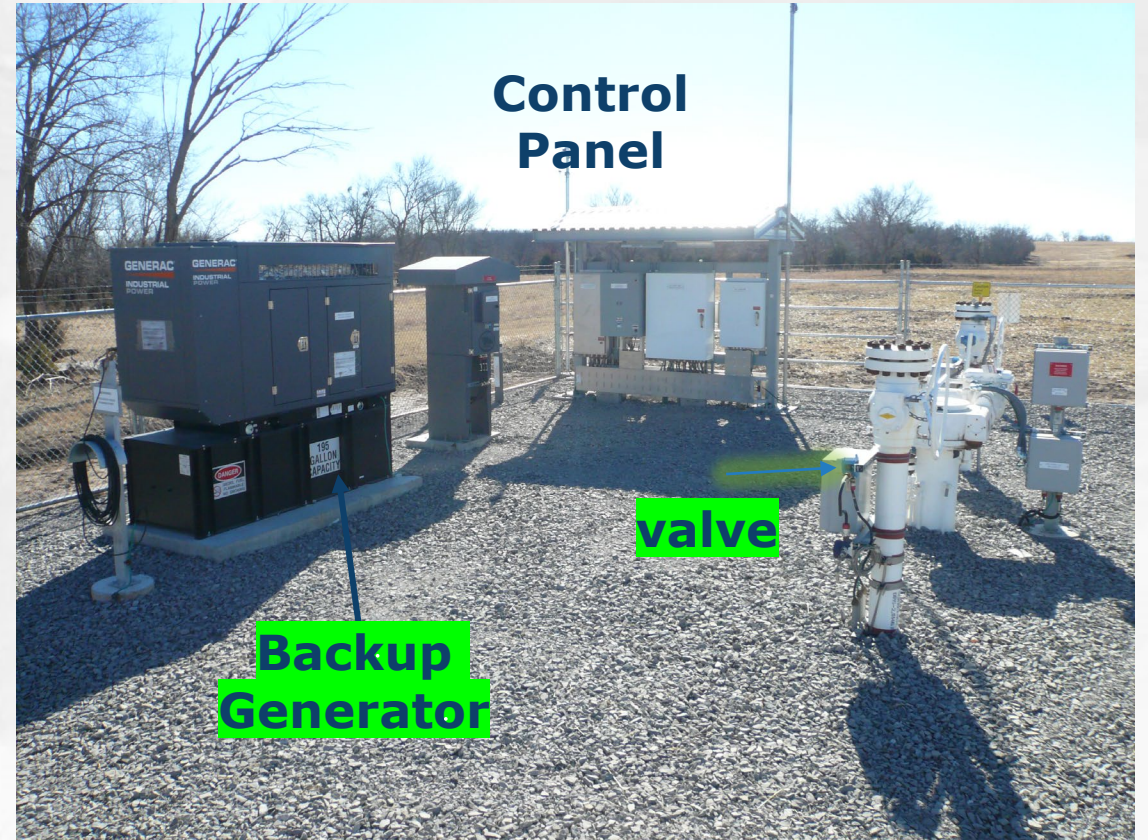
Valve Actuators

Valve Automation

# Pipeline Mainline Valve Sites

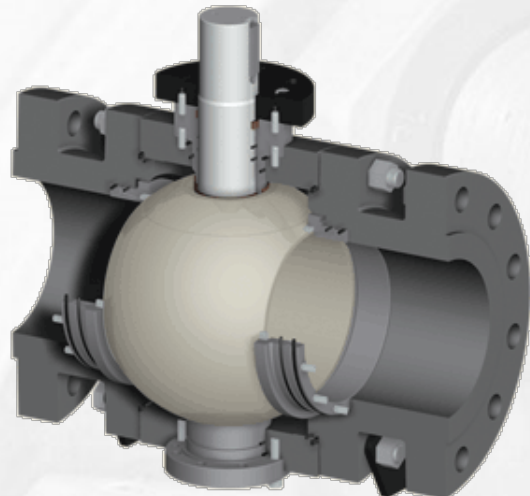


**Gas Transmission**

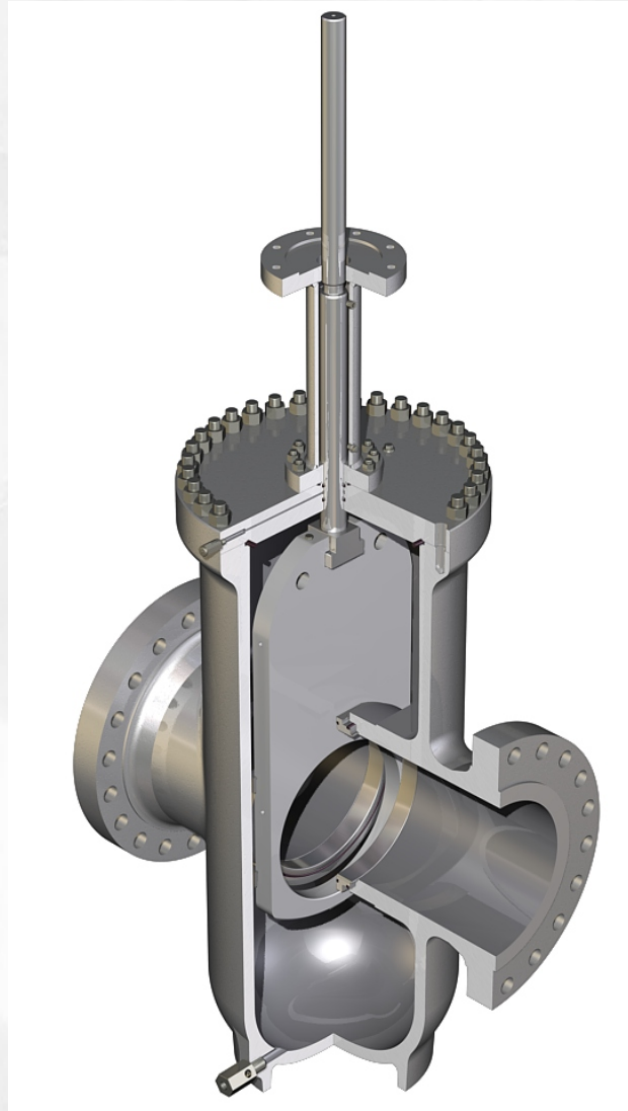


**Liquid Transmission**

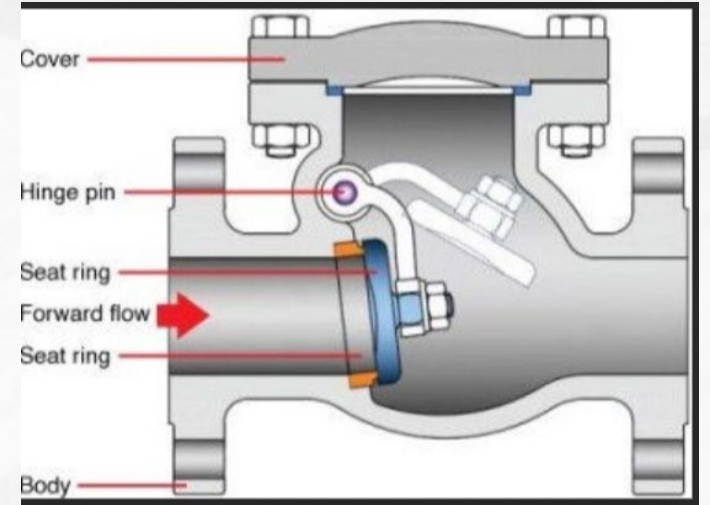
# Valves



**Ball Valve**



**Gate Valve**



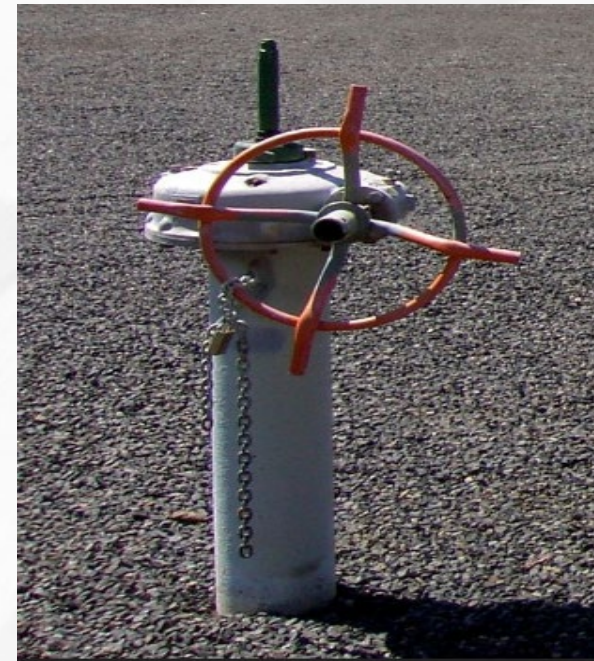
**Check Valve**

# Valve Actuators

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**Gas/Hydraulic Actuator  
(Gas Transmission)**



**Manual  
Actuator**

# Valve Actuators – con't



**Electric Actuator  
(Liquid Transmission)**



**Gas Vane Motor  
Driven Actuator (GT)**

# Gas Transmission - Gas/Hydraulic Actuator



## Valve Automation

### Automatic Shutoff Valve (ASV)

- Manual open/close
- Automatic close (Pneumatic low pressure switch)

### Remote Control Valve (RCV)

- Manual open/close
- Automatic close (pneumatic low pressure switch)
- Remote close (SCADA)
- Limit switch (valve position)

# Gas Transmission - G/H Actuator (NPS 36 Gate Valve)



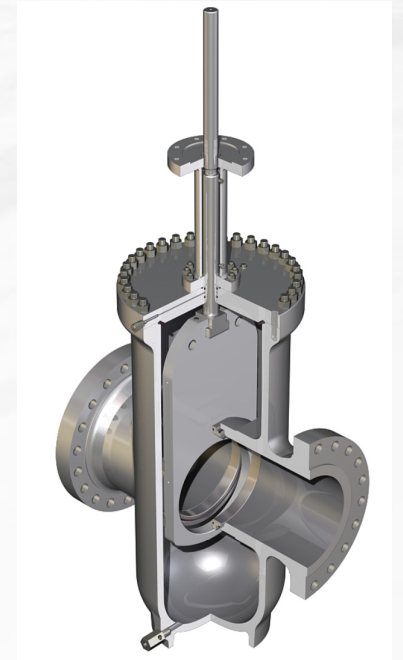
**Gas Vane Motor  
Driven Actuator**



**Gas/Hydraulic Actuator**

## **Actuator Upgrade**

- Safety considerations
- Automatic close (pneumatic pressure)
- Power Gas
- Manual open/close





# Liquid Transmission – Electric Actuator



## Valve Automation

### Infrastructure

- Electric actuator
- Utility power
- Backup generator
- Control system
- Communication system

### Remote Control Valve (RCV)

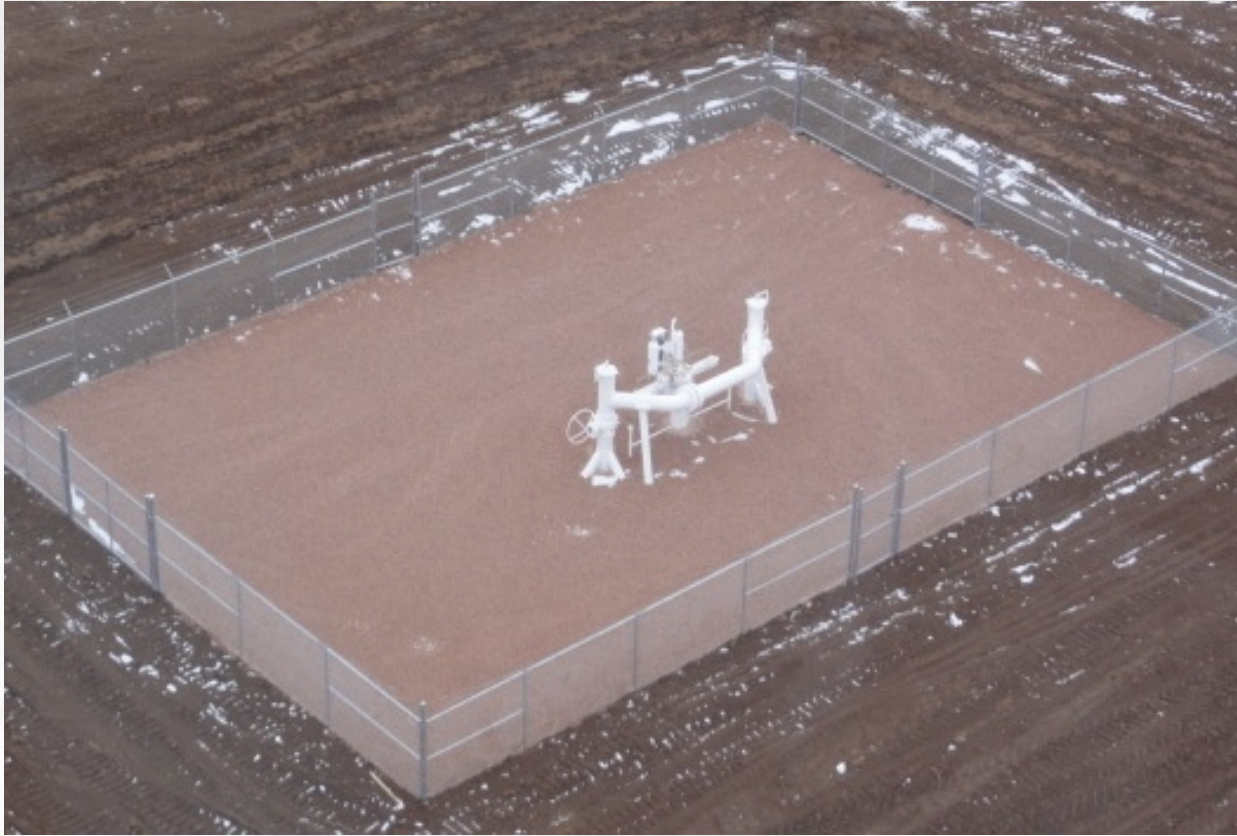
- Remote open/close (OCC/SCADA)
- Limit switch (valve position)
- Manual open/close

# Valve Automation

- Power source
  - Utility power
  - Solar power
  - Thermo electric generators (NG)
  - Backup generator (LT)
- Telemetry options
  - Cellular
  - Satellite
  - Radio
  - Land line
- Control system options
  - Programmable controller
- Housing
  - Instrument Building
  - Instrument rack



# New Pipeline Construction



## Considerations

- Valve Type;
  - Ball or Gate Plug
  - Check
- Valve Actuator;
  - Company practice
    - GT - G/H
    - LT - Electric
- Valve Automation;
  - Company practice
    - Gas Transmission - ASV
    - Liquid Transmission - RCV

# Questions

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# Gas Transmission Mainline Valve Site

