

TRANSIENT MODELING AND DESIGN OF SURGE PROTECTION SYSTEMS WITH AN INTRODUCTION TO PIPE2012: SURGE SOFTWARE

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Outline of Topics

Session 1: Water Hammer in Pipeline Systems

- What is water hammer?
- What causes water hammer?
- Effects of water hammer
- How to model?
 - Comparison of method of characteristics vs. wave plan method
- Control technology
 - Compressed air devices
 - Air valves
 - Relief valves
- Case studies
 - Transmission mains
 - Distribution systems
- Common misconceptions and modeling errors
- Better modeling and design practices
- Recent advances in air valve technology

Session 2: Introduction to Pipe2012: Surge

- Graphical Interface
- Building Network Models
- Steady State Analysis
- Surge Analysis
 - Transient initiating events
 - Results presentation
 - Interpretation of results
 - Design of Surge Protection Systems
 - Special Tools
- Limitations of Modeling Tools
- Check valves in pipeline systems