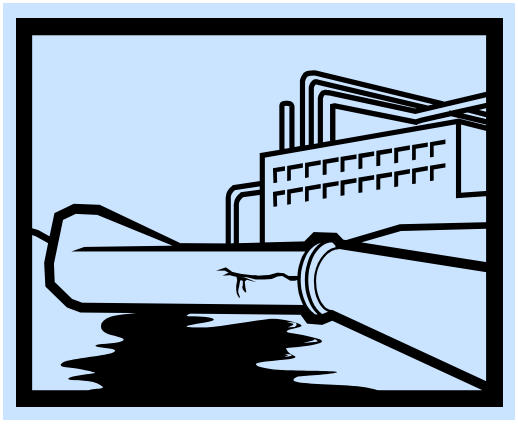
Track #2
Leak Detection

Mark Piazza / PRCI, Chair
Jim Merritt / PHMSA, Co-Chair
Andy McClymont / Cycla, Facilitator



Attendance Breakdown

Approximate total attendance	25 persons
Federal Government	2 persons
State Regulators	1 person
Pipeline Industry	7 persons
Researchers (GTI/PRCI/SWRI)	3 persons
Vendors/Others	12 persons

Presentations

- PRCI Research Program – Mark Piazza / PRCI
- DOT Perspectives on Leak Detection – Jim Merritt / PHMSA
- LDC/Utility Issues and R&D Needs – Kiran Kothari / GTI
- Gas Distribution Operator Viewpoint – Jeff Pugliese / Washington Gas
- Innovative Applications – Barton Bennett / Odyssian
- PRCI RAM Program – Gary Shane / BP
- NYSEARCH Leak Detection Programs – Angelo Fabiano / NYSEARCH
- ANGEL Program – Dwight Greenlee / ANGEL Services

Top Identified R&D Gaps

Gap #1 – Small Leak Detection (Technology)

Gap #2 – Leak Pinpointing (Technology)

Gap #3 – Aerial Reconnaissance (Technology)

Gap #4 – River Crossings (Technology)

Gap #5 – Odorant Issues (Technology / General Knowledge)

Associated Details (Gap #1)

Small Leak Detection (<5 cfh)

New or Improved Technology

a.What pipeline type(s) does the technology target?

All, but *Primary Gap is with Detecting Liquid Pipelines*

b. What operating environment(s) would the technology operate?

All

c. What are any functionality and or performance requirements?

Easy to Use
Portable
Sensitivity
Timely
POD / POFC

Associated Details (Gap #1, cont'd)

Small Leak Detection (<5 cfh)

New or Improved Technology

d. What road blocks or barriers prevent the technology deployment?

Instrument Sensitivity
Scalable, cost effective solution for retrofit
Remote detection
Requires Line of Sight

e. What are anticipated targets or timeframes to complete this research?

Estimated 3-5 years to Develop and Commercialize

Associated Details (Gap #2)

Leak Pinpointing Tools

New or Improved Technology

a.What pipeline type(s) does the technology target?

All, but Distribution is where primary need is (Different technologies for liquid vs. gas)

b. What operating environment(s) would the technology operate?

All

c. What are any functionality and or performance requirements?

Driven by the Need for a Technology fix for loss of workforce institutional knowledge

High Accuracy (e.g., ± 1.5 ft.) in order to limit repair footprint

Associated Details (Gap #2, cont'd)

Leak Pinpointing Tools

New or Improved Technology

d. What road blocks or barriers prevent the technology deployment?

Migration Patterns

e. What are anticipated targets or timeframes to complete this research?

3-5 years

Associated Details: (Gap #3)

Aerial Reconnaissance

New or Improved Technology

a.What pipeline type(s) does the technology target?

All

b. What operating environment(s) would the technology operate?

Manned and Unmanned

c. What are any functionality and or performance requirements?

Response Time
Sensitivity
Multifunction Capability (Other Monitoring): "Pigs Can Fly"

Associated Details: (Gap #3, cont'd)

Aerial Reconnaissance

New or Improved Technology

d. What road blocks or barriers prevent the technology deployment?

FAA regulations (Unmanned)
Payload / Miniaturization
Performance Capability (including Delayed Communication)
Cost

e. What are anticipated targets or timeframes to complete this research?

Short term (1-3): Manned, Liquid Transmission for Deployment / demonstration
Long Term (3-5): Unmanned, LDC for Deployment / demonstration

Associated Details: (Gap #4)

River Crossings

New or Improved Technology

a.What pipeline type(s) does the technology target?

All

b. What operating environment(s) would the technology operate?

Underwater < 50 ft.
Non-piggable crossings
IM Requirements

Associated Details: (Gap #4, cont'd)

River Crossings

New or Improved Technology

c. What are any functionality and or performance requirements?

Replace Human Divers
Leak Location
Additional Capabilities: Depth of Cover, pipe to soil potential

d. What road blocks or barriers prevent the technology deployment?

Cost
Adaptability of Existing Technology

e. What are anticipated targets or timeframes to complete this research?

3 yrs. to Develop Cost Effective Leak and Integrity Monitoring Tool

Associated Details: (Gap #5)
Odorant Effectiveness

New or Improved Technology

a.What pipeline type(s) does the technology target?

Class 2 &3 Gas Transmission, Gas Distribution

b. What are any functionality and or performance requirements?

Comprehensive Literature Search
Identification of Appropriate Odorant
Determine impacts of Varying Environments/Conditions
Must Meet Regulations

Associated Details: (Gap #5)

Odorant Effectiveness

New or Improved Technology

c. What road blocks or barriers prevent the technology deployment?

Lack of Historical Data
Absorption by New Pipelines
Soil Scrubbing Effects

d. What are anticipated targets or timeframes to complete this research?

Information Obtained/ Disseminated within 1.5 Years

Additional Identified Gaps

- Inside-Structure Leaks