

Advanced Welding and Joining Technical Workshop



Pipeline & Hazardous Materials Safety Administration

Office of Pipeline Safety

Research & Development Program

Welcome

- **Welcome from “our” Steering Committee**
- **Second in a series of workshops**
- **Today’s Approach: Review existing programs, Brainstorming, and Gap Analysis**
- **Safety and Comfort Announcements**
 - ◆ **Fire Exits, Restrooms, Cell phones, Breaks**
- **Show of Hands Please**
 - ◆ **Government, industry, Vendors**



Steering Committee Members

Government Organizations

- DOT Office of Pipeline Safety (OPS)
- DOC National Institute of Standards and Technology (NIST)
- DOI Minerals Management Service (MMS)
- National Energy Board of Canada

Private Organizations

- American Gas Association (AGA)
- American Petroleum Institute (API)
- Gas Technology Institute (GTI)
- Pipeline Research Council International, Inc. (PRCI)
- National Association of Pipeline Safety Representatives
- Northeast Gas Association (NGA)
- Plastic Pipe Institute/ Plastic pipe Database Committee

Companies

- Columbia Gas
- Edison Welding Institute
- EMCC
- Lincoln Electric
- McElroy MFG
- TransCanada

Universities

- Colorado School of Mines

Thanks

- **Tom Siewert -Materials Reliability Division**
- **Keynote Addresses**
- **Working Groups**
 - ◆ **Chair and Co-chair**
 - ◆ **Presenters**
 - ◆ **Recorders**
- **All that are in attendance**
 - ◆ **Government, industry, Vendors**



General Outline of Workshop

- **Wednesday Morning: Plenary**
 - ◆ Supporting Remarks
 - ◆ Keynote address (set the challenge)
- **Wednesday Afternoon & Thursday Morning**
 - ◆ Working Groups Breakout
- **Thursday Afternoon**
 - ◆ Working Group Report outs
- **General Discussion/ Next Steps**
- **Adjourn Workshop**
- **NIST Tour**



Why are we Here?

- Exchange information on advancements in welding and joining technologies
- Provide information for pipeline inspection & oversight
- Set common goals & strategies to advance the safety and integrity of welding and joining

“Through collaboration with industry trade organizations, pipeline operators, regulators and researchers, this workshop will characterize the many technical issues with welding and joining, and identify the associated mutual goals and the technology development, standard strengthening and regulatory changes required to reach identified goals.”

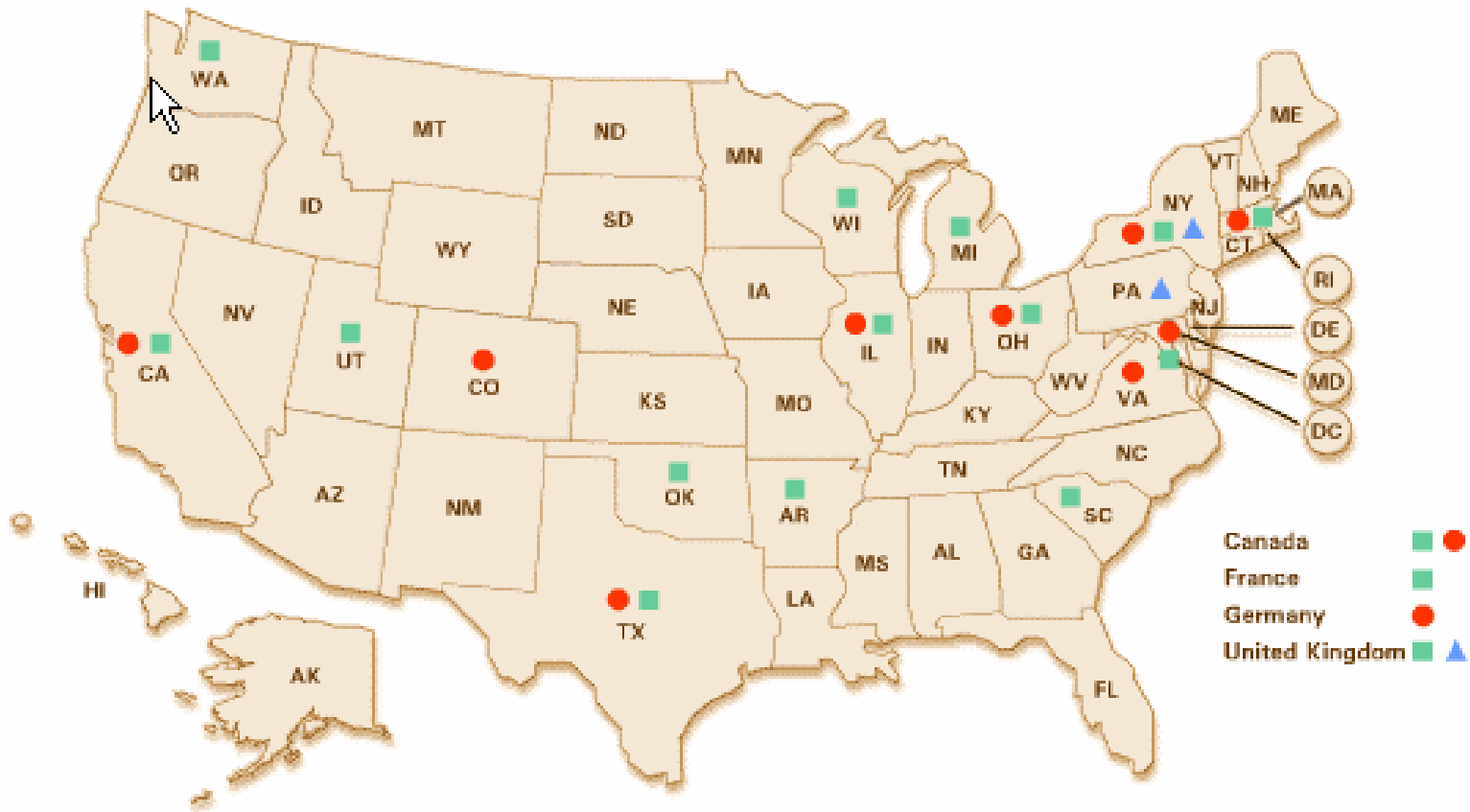


Research Projects funded by Pipeline Safety R&D Program

Lead Organizations ●

Partner Organizations ■

University Partners ▲



<http://primis.phmsa.dot.gov/rd/projectmap.htm>

R&D Challenges

R&D Category	Challenge
Welding Properties & Data	Establish a comprehensive framework for collecting/organizing weld and joining properties data to support modeling, integration, sensors, integrity, and standards
Modeling	Develop the capability to simulate thermal, mechanical, and metallurgical change then integrate into product life cycle,
Sensing and Measurement Techniques and Process control	Advance sensing techniques to completely characterize and control weld and joining quality during process
Integrity Assessment	Improve integrity assessment techniques to better assess fitness-for-service and life expectancy
New welding & Joining Processes	Improve current processes and develop new processes that target quality, performance, cost, markets, and environmental performance

R&D Challenges

R&D Category	Challenge
Manufacturing Integration	Develop and implement more effective techniques for demonstrating benefits of new technologies and transferring them to industry
Repair Techniques	Characterize the degrading effects of time, service, and environment develop relevant repair technologies; create accessible base repair information
Standards	Ensure the consistency and reasonableness of welding and joining standards
Materials	Maintain joining and weldability as an important characteristic in development of materials for applications requiring improved performance; develop smart materials that can communicate their conditions



PHMSA New Solicitation Announcements

Advanced Coatings R&D Solicitation

<http://primis.phmsa.dot.gov/rd/announcements.htm>

Focus Areas:

- Coating Integrity
- Coating Application Affects
- Disbonded Coating Identification

US DOT Small Business Innovation Research (SBIR)

<http://www.volpe.dot.gov/sbir/index.html>

Focus Areas:

- Coating disbondment inspection tools
- Cost effective pipeline coating technologies for assessment & fingerprinting
- Innovative technologies with cost effective solutions that improve current None Destructive Evaluation (NDE) capabilities.

Conclusion

- **Ambitious Agenda –Watch the Doors**
- **Lots to See and Do –So Spread Out**
- **Overflow Q&A – Cards at Registration**
- **Presentations and Results Will Be Posted**
 - ◆ <http://primis.phmsa.dot.gov/rd/workshops.htm>
- **Feedback Is Welcomed**
 - ◆ **Comments about this or future Forums**