

# ***Pipeline Research Council International, Inc.***

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## **Pipeline Industry Data Hub**

**PHMSA VIS Working Group**

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# Pipeline Research Council International

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## PIPELINE

- Natural Gas
- Crude Oil & Petroleum Products
- Biofuels
- CO<sub>2</sub>
- Related Facilities

## RESEARCH

- Knowledge
- Technology
- Deployment & Transfer
- Innovation

## COUNCIL

- Forum for Ideas & Opportunities
- Peer-based
- Industry-driven
- Source of Research Inventory

## INTERNATIONAL

- North America
- Europe
- South America
- Middle East
- Asia
- Australia

# PRCI Mission

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*To collaboratively deliver relevant and innovative applied research to continually improve the global energy pipeline systems.*

# PRCI Membership

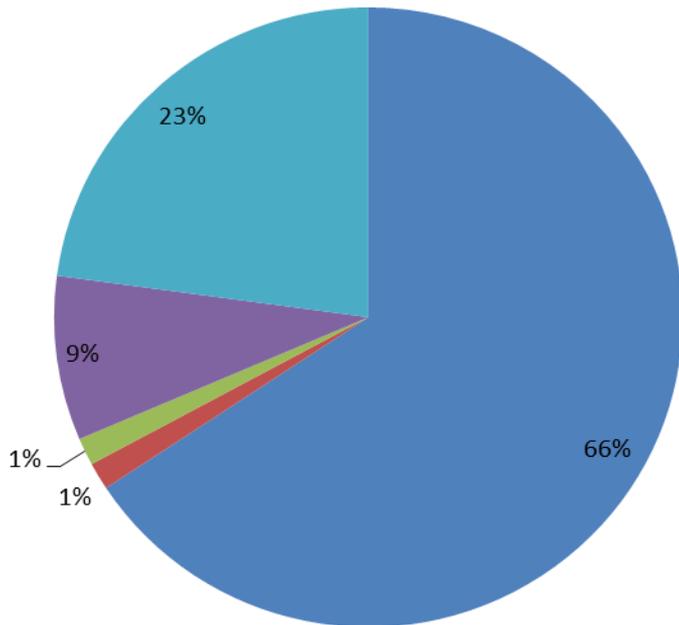
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- **33 Energy Pipeline Operating Companies**
  - 17 Natural Gas Transmission; 8 Liquid
  - 8 Liquid/Natural Gas
  
- **4 Pipeline Industry Organization (PIO) Members**
  - American Petroleum Institute (API)
  - Association of Oil Pipe Lines (AOPL)
  - Canadian Energy Producers Association (CEPA)
  - Operations Technology Development (OTD)
  
- **37 Associate Members**
  - Australia, Canada, China, Europe, Japan, Mexico, U.S.
  
- **Worldwide Research Organization**
  - 40 U.S. Companies
  - 34 Non-U.S. (Australia, Brazil, Canada, China, Europe, Japan, & Mexico)

# Current Membership

## Membership By Region

■ North America ■ Australia ■ South America ■ Asia ■ Europe



- **Australia**
  - APGA-RSC
- **Brazil**
  - Petrobras
- **Asia**
  - Baosteel
  - CNPC TGR1
  - CPP
  - JFE Steel
  - NSSMC
  - PetroChina
  - Welspun
- **Europe**
  - Cadent
  - Elster-Instromet
  - ENGIE
  - Gassco
  - Gasunie
  - Hoerbiger
  - i2i Pipelines
  - Innospection
  - KROHNE
  - National Grid
  - NDT Global
  - SICK
  - SIG
  - Sonomatic
  - Total
  - TWI
  - WorleyParsons
- **United States & Canada**
  - Aegion
  - Alliance
  - API
  - Applus RTD
  - ArcelorMittal
  - AOPL
  - ATCO
  - BHGE
  - Boardwalk
  - Buckeye
  - Chevron
  - Colonial
  - ConocoPhillips
  - Diakont
  - Dominion
  - Dresser-Rand
  - Emerson Process Mgmt.
  - Enbridge
  - Enduro
  - Energy Transfer
  - Enterprise
  - EPRI
  - Evraz
  - ExxonMobil
  - Kinder Morgan
  - Koch
  - Lincoln
  - Marathon
  - National Fuel
  - OTD
  - PG&E
  - Phillips 66
  - Plains
  - Quanta
  - RCP
  - RCS
  - ROSEN
  - ShawCor
  - Shell
  - Shell Global
  - Solar Turbines
  - SoCalGas
  - Spectra\*
  - T.D. Williamson
  - Team
  - TransCanada
  - TransGas
  - Williams

# **TECHNOLOGY DEVELOPMENT CENTER**

# Technology Development Center - TDC

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# PRCI Scope – A Technical Underpinning

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- **Materials Engineering**
  - Pipe metallurgy & fabrication
  - Welding & construction
  - Repair materials and methods
  - Corrosion, cracking, geotech, mechanical damage control
- **Inspection and Diagnostics**
  - In-line inspection (ILI) and Non destructive examination (NDE)
  - Online sensors
  - Leak detection
  - 3<sup>rd</sup> party damage/Right of way intrusion
- **Equipment/Facility Design and Operation**
  - Compressors & Pumps
  - GHG emission
  - Storage
- **Other**
  - Human factors

# PRCI Data Hub Roadmap

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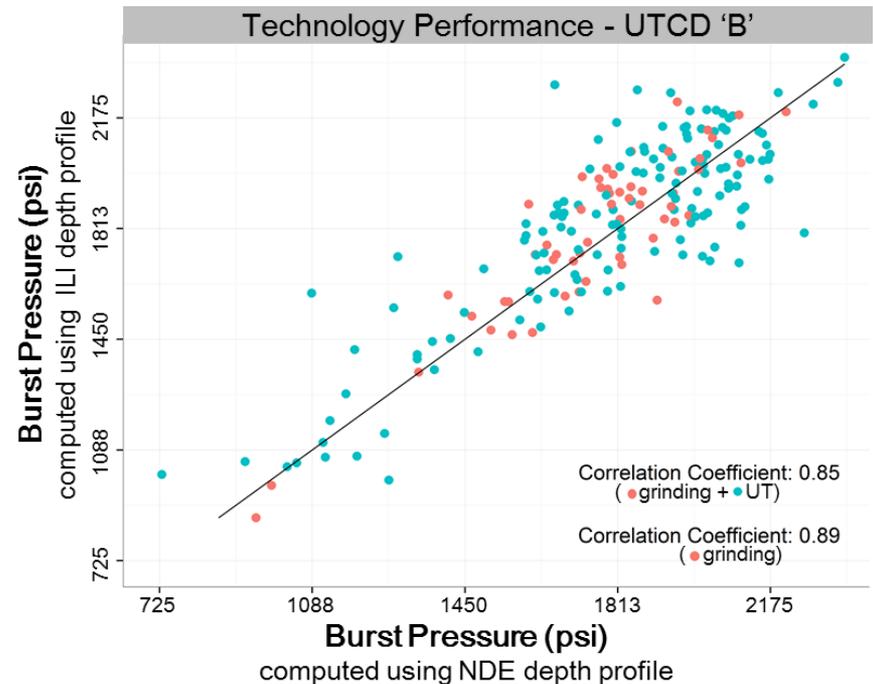
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1. **ILI & Field Data project well underway**
2. **Define role within industry framework of Information Sharing**
3. **Develop tools, systems, organization**
4. **Create the Virtual Technology Development Center (V-TDC)**

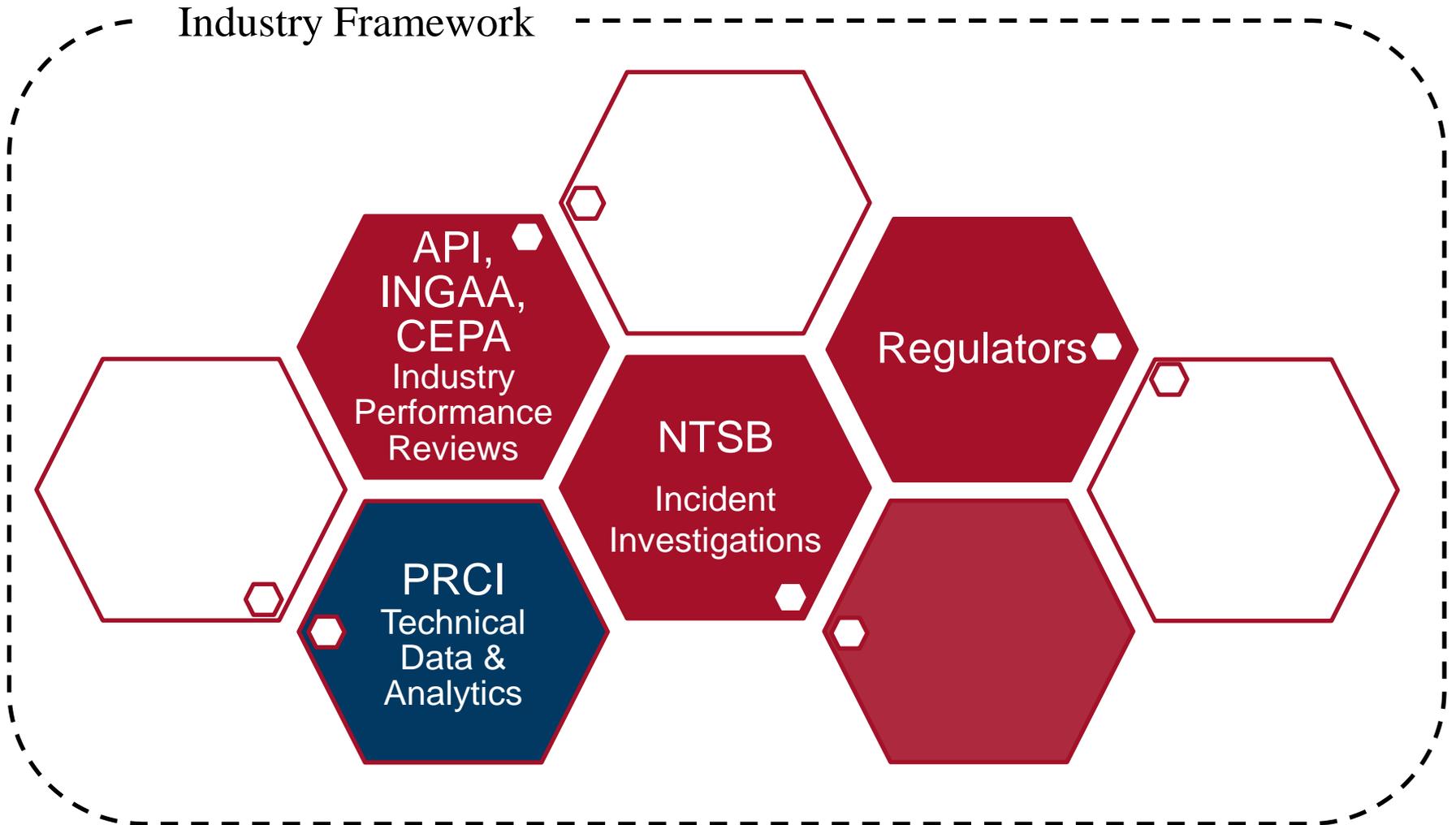
# ILI & Field Data Project

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- **Industry-wide database for modern crack ILI technology reliability**
  - *Answers NTSB Recommendation to PRCI (2010 Marshall Line 6B Incident)*
- **Broad operator collaboration**
  - *Resolved complexities around data collection, confidentiality, data integrity*
- **Analytics on >50,000 data points**
  - *Unprecedented and growing*
- **Results widely available**
  - *Directly driving change, critical topic*
- **Permanent process structure**
  - *Moving to other technologies*



# Fabric of Info Sharing



# Data Sharing -The PRCI Case

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- **Deep skill set related to pipeline engineering & operations**
  - **Many projects - substantial banked existing data/info**
  - **Recognized globally as an objective, science-based center**
  - **Long standing relationships with virtually every pipeline industry stakeholder type**
  - **Many key systems in-place (funding, administration, IT)**
- **Intention is to move to the next level of capability**

# PRCI Data/Info Summary

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- **PRCI is a ready-made structure that**
  - Warehouses a great deal of data/info from around the world
  - Conducts scientific analytics
  - Disseminates results and drives technology transfer
- **Independently aiming to modernize management and sharing within current mandate (science & technology)**
- **Standing ready to link with broader industry coordination efforts**