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Exhibit No. 8-B

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Improving Pipeline Safety through Targeted Research
Presentation by Robert Smith
U. S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

(16 Pages)

IMPROVING PIPELINE SAFETY THROUGH TARGETED RESEARCH

NTSB Hearing on San Bruno, CA
Natural Gas Pipeline Explosion and Fire

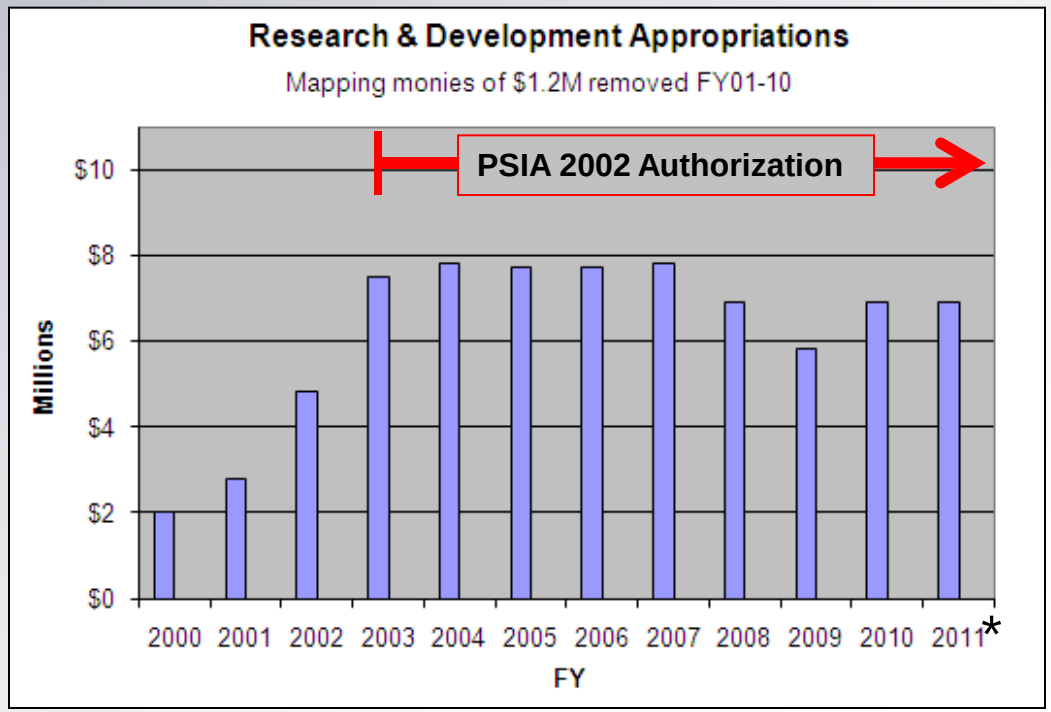
March 3, 2011
Washington, DC

About the Program

Pipeline Safety R&D Program Mission:

To sponsor research and development projects focused on providing near-term solutions that will improve the safety, reduce environmental impact, and enhance the reliability of the Nation's pipeline transportation system.

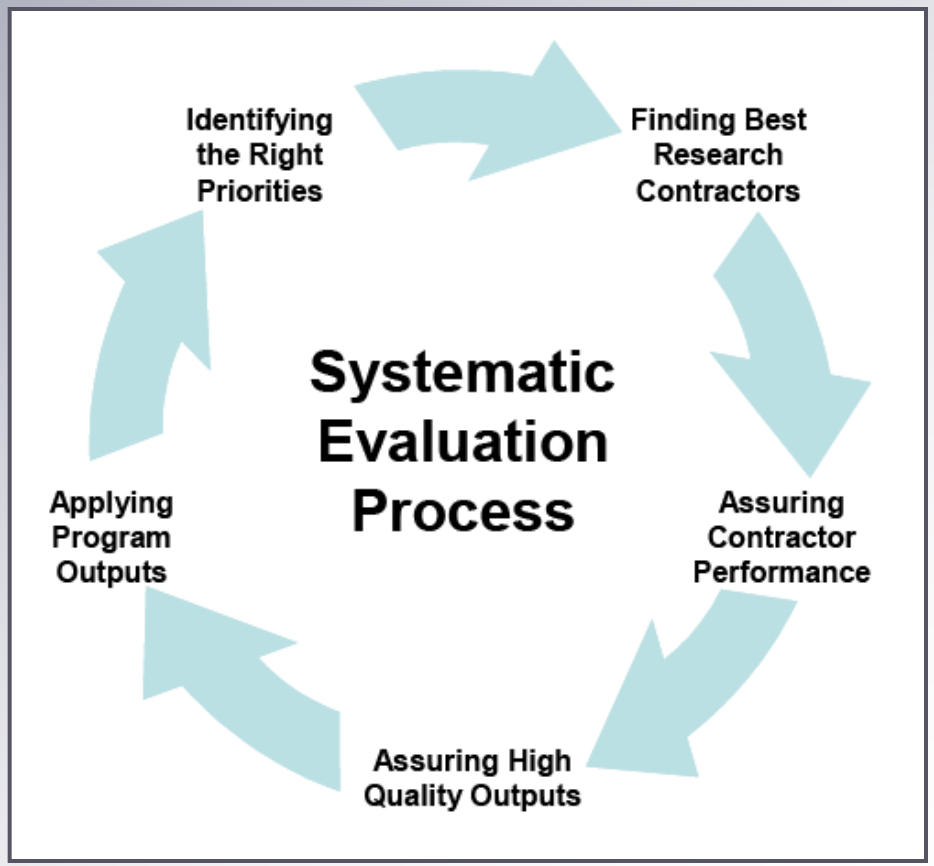
- Pipeline Safety Improvement Act of 2002 established our modern program and current Authorization level



*** Continuing Resolution through March 2011**

About the Program

- **Employs a time tested process that is generating results**
  - Incorporates stakeholder input/consensus driven
  - Highly transparent
    - Competitive, coordinated, collaborative and co-funded
    - Interactive website
  - Peer reviewed and measuring/reporting results



Research Program Objectives

Developing Technology

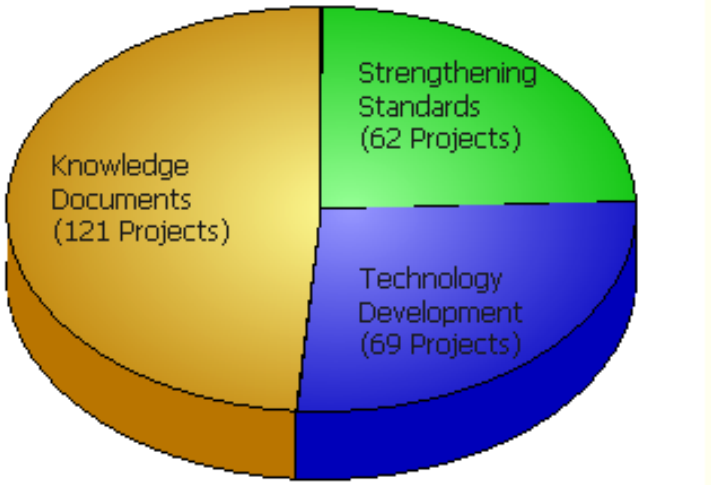
Fostering the development of new technologies so that pipeline operators can improve safety performance and more effectively address regulatory requirements.

Strengthening Consensus Standards

Targeting and feeding new knowledge into the process of keeping standards relevant to their purpose.

Promoting Knowledge

Generating and promoting general knowledge to decision makers.



Objective	Projects	PHMSA	Industry	Total
Strengthening Standards	62	$18.17M	$24.79M	$42.97M
Technology Development	69	$34.59M	$41.92M	$76.51M
Knowledge Documents	121	$32.41M	$47.08M	$79.49M

NOTE: Projects can impact and be relevant in two or more areas. Because of this, counts and sums will amount to more than 100% of program totals.

Research Strategies

Program Category	Objectives	PHMSA	Industry	Total
Damage Prevention	Strengthening Standards	$ 0.42M	$ 0.49M	$ 0.91M
	Technology Development	$ 2.79M	$ 2.33M	$ 5.12M
	Knowledge Documents	$ 0.88M	$ 1.05M	$ 1.93M
Pipeline Assessment and Leak Detection	Strengthening Standards	$ 7.44M	$10.61M	$18.05M
	Technology Development	$25.05M	$32.02M	$57.07M
	Knowledge Documents	$13.47M	$19.51M	$32.99M
Defect Characterization and Mitigation	Strengthening Standards	$ 3.48M	$ 4.57M	$ 8.06M
	Technology Development	$ 0.80M	$ 1.20M	$ 2.00M
	Knowledge Documents	$ 6.64M	$ 8.29M	$14.94M
Improved Design, Construction and Materials	Strengthening Standards	$ 6.51M	$ 8.74M	$15.25M
	Technology Development	$ 5.73M	$ 6.10M	$11.83M
	Knowledge Documents	$ 9.80M	$16.13M	$25.93M
Enhanced Operation Controls and Human Factors Management	Strengthening Standards	$ 0.00M	$ 0.00M	$ 0.00M
	Technology Development	$ 0.00M	$ 0.00M	$ 0.00M
	Knowledge Documents	$ 0.53M	$ 0.49M	$ 1.02M
Risk Management and Communications	Strengthening Standards	$ 0.00M	$ 0.00M	$ 0.00M
	Technology Development	$ 0.00M	$ 0.00M	$ 0.00M
	Knowledge Documents	$ 0.03M	$ 0.03M	$ 0.07M
Safety Issues for Emerging Technologies	Strengthening Standards	$ 0.42M	$ 0.48M	$ 0.91M
	Technology Development	$ 0.21M	$ 0.26M	$ 0.47M
	Knowledge Documents	$ 1.20M	$ 1.66M	$ 2.86M

NOTE: Projects can impact and be relevant in two or more areas. Because of this, counts and sums will amount to more than 100% of program totals.

Impact: Technology Development

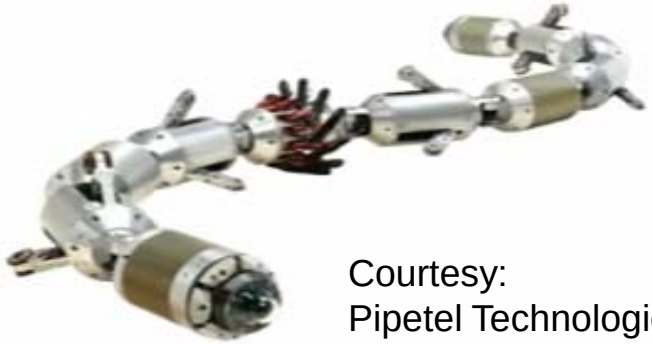
Software/Hardware improvements to guided wave used to inspect cased crossings

- Farther inspection distances
- Improved accuracy in characterizing defects

First ever In-Line Tool to map cathodic current demand

- Key in finding complex corrosion defects and coating disbondments

Courtesy: Baker Hughes

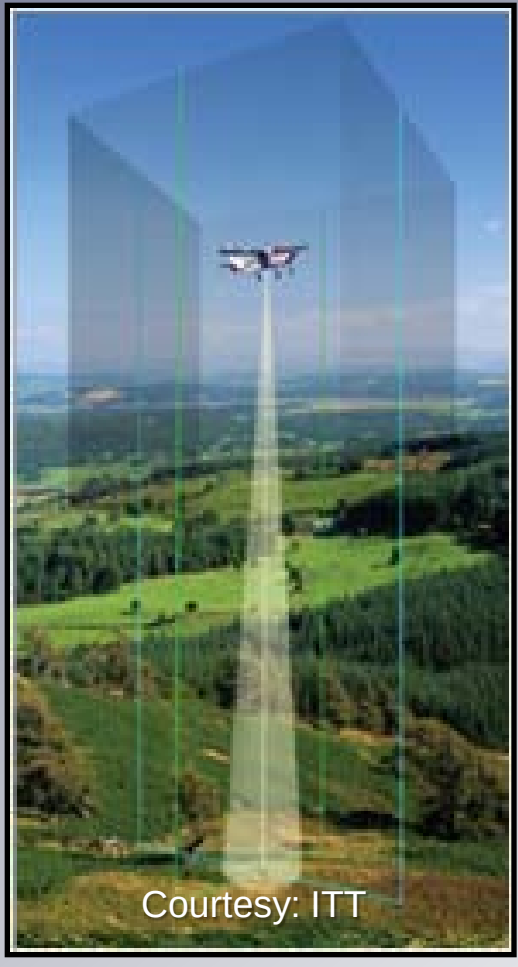


Courtesy:
Pipetel Technologies

Innovative tool to inspect unpiggable natural gas pipelines

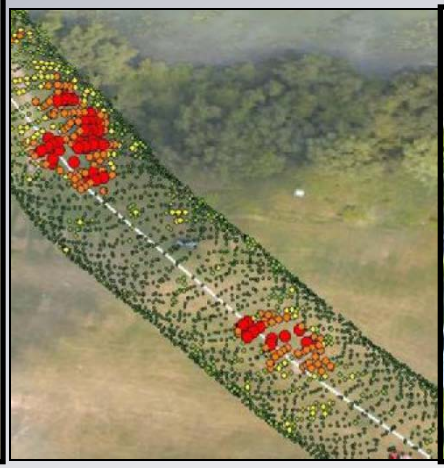
- Untethered, 6”-8” up to 750 psi

Impact: Technology Development



Leak Detection:

- Improving detection thresholds for natural gas
- Integrating technology to both helicopter/fixed wing aircraft
- Expanding fixed wing technology to detect hazardous liquid leaks



Anticipated New Technology

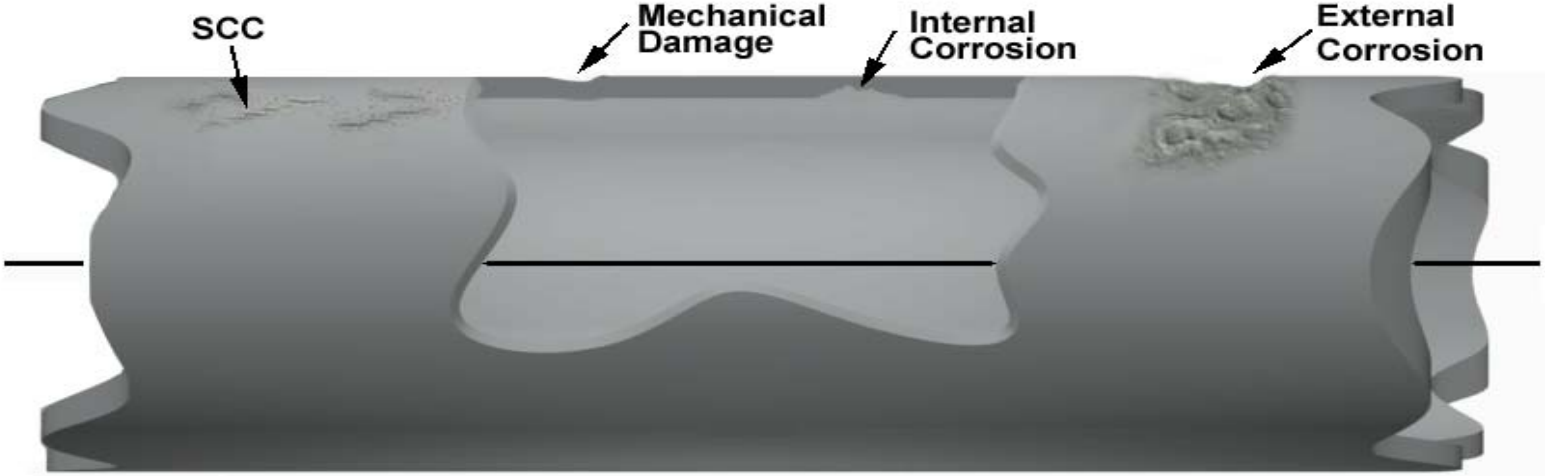
Innovative tool to inspect unpiggable natural gas pipelines

- Untethered, 20”-26” up to 750 psi
- Currently in demonstration phase of research
- Additional pipe diameter inspection possible

Anticipated New Technology

Several Hand Held Tools - New Sensors for In-Line Inspection

- Improved detection & Better sizing of identified defects
  - Magnetic Flux Leakage
  - Ultrasonic
  - Meandering Winding Magnetometer Arrays



SCC: Stress Corrosion Cracking

Impact: Consensus Standards

Strengthening Consensus Standards

Number of projects targeting Consensus Standards: **62**
Number of projects results used to revise Consensus Standards: **4**
Number of Consensus Standards affected by projects: **41**
Number of Consensus Standards revised by project results: **3**
Number of project results sent to committee for use in possible revision: **11**

Impact Measured:

1. Welding standard with the American Petroleum Institute
2. Corrosion standards with NACE International

Data call in progress to update these impacts

Direct Assessment (DA)

- **External Corrosion Direct Assessment improving since 2004**
- **Internal Corrosion DA slowly getting wetter**
- **DA now expanding into other threats including:**
  - Stress Corrosion Cracking
  - Mechanical Damage
  - Ethanol

Threat	Pipeline Type	DA Method
External Corrosion	Natural Gas Hazardous Liquid	ECDA
Internal Corrosion	Dry/Wet Natural Gas & Hazardous Liquid	ICDA
Stress Corrosion Cracking	Natural Gas	SCCDA
Excavation Damage	Natural Gas Hazardous Liquid	MDDA

Dry Gas ICDA	Wet Gas ICDA	Liquid ICDA
Existing Standard	Existing Standard	Research Underway

The Future is Bright!

- **This collaborative and co-funded research is leveraging resources, removing duplication and generating tangible solutions**
- **Program rapport is high with pipeline safety stakeholders**
- **Program outputs can be accelerated with additional resources**
- **Much more information is available at our program website**
  - http://primis.phmsa.dot.gov/rd/

Thank You!

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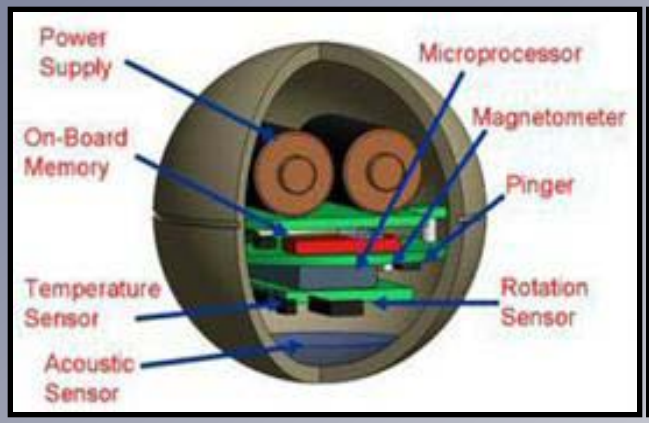
Extra Slides

Anticipated New Technology



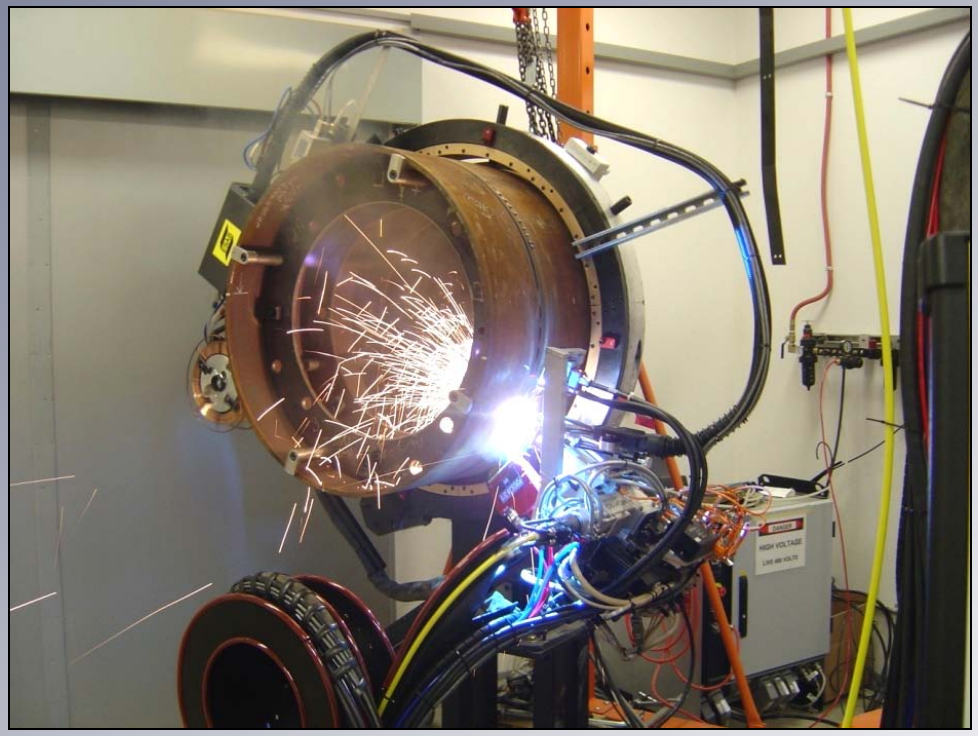
Leak Detection:

- Pinpointing leaks in Natural Gas and Haz. Liq. Pipelines

Corrosion Management:

- Pinpointing areas of water hold-ups to identify potential internal corrosion threats

Anticipated New Technology



Laser Welding Systems:

- Improved weld integrity
- Incorporates state of the art automated inspection technology