2002

INTERAGENCY R&D Program Presentation

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R&D Program Presentation

Department of Transportation
Department of Energy
Department of Commerce
Department of the Interior

NIST
National Institute of Standards and Technology

Presentation Objective

The main objective is to provide an informative, joint pipeline R&D program presentation which describes the collaboration, coordination and project co-funding activities that has resulted from the passage of the Pipeline Safety Improvement Act of 2002 (PSIA 2002).

More specifically to identify and describe the following:

1. Requirements of PSIA 2002 and joint implementation
2. Current project funding levels
3. Current project co-funding between programs
4. Technology demonstrations
5. Project hand-offs
6. Future joint activities

Pipeline Safety Improvement Act of 2002 (PSIA 2002)

PSIA-2002 required that the Department of Transportation (DOT), the Department of Energy (DOE), and the National Institute of Standards and Technology (NIST) in the Department of Commerce (DOC) “shall carry out a program of research, development, demonstration and standardization to ensure the integrity of pipeline facilities.”

The agencies have agreed to the areas of responsibility as described by constructing the following:

1. An Interagency Five-Year R&D Program Plan for Pipeline Safety and Integrity

2. A Memorandum of Understanding

3. Annual Update Reports

Interagency Implementation of the PSIA 2002 Mandate

To be able to Collaborate, Coordinate and Co-Fund effectively, the following activities have been designed:

1. Quarterly interagency meetings to discuss each program's R&D activities and identify joint opportunities

2. Periodic Government/Industry R&D Forums to identify challenges and gaps in pipeline technology and safety

3. Collaborative review of agency research solicitation submissions

4. Technology demonstrations involving interagency hand-off of R&D project responsibility as technology is proven feasible

5. Interagency calendar to illustrate our scheduled activities

6. Interagency Pipeline R&D Program presentation to consolidate information on collaboration, coordination and project co-funding activities

Agency Responsibilities Related to PSIA 2002 Program Elements

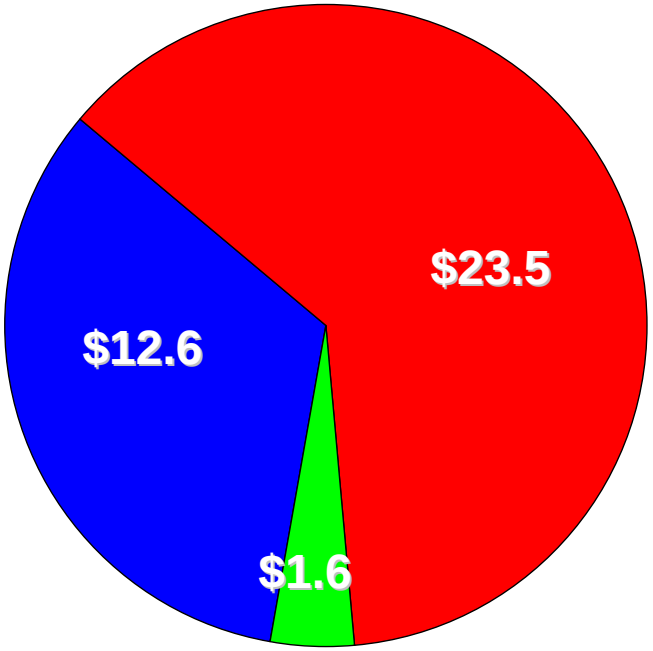
Program Elements	On-Shore	Off-Shore
1. Materials inspection	DOT	DOI
2. Pipe anomaly detection	DOT	DOI
3. Internal inspection and leak detection technologies	DOT	DOI
4. Methods of analyzing content of pipeline throughput	DOT	DOI
5. Pipeline security	DOT	DOI
6. Risk assessment methodology	DOT	DOI
7. Communication, control, and information systems surety	DOT	DOI
8. Fire safety of pipelines	NIST	DOI
9. Improved excavation, construction, and repair technologies	DOT	DOI
10. Other appropriate elements a. Materials analysis & development b. Standardization activities	DOT NIST NIST	DOI NIST NIST

- Assuring the safety and integrity of hazardous liquid and natural gas pipelines through R&D activities designed to support identification, characterization, detection and management of risks to safety and integrity ;
- Historically focused on developing new and advanced infrastructure technologies having greater developmental risk and expected to be commercialized over a longer time frame. The Administration has proposed to transfer responsibility for developing these pipeline safety technologies to the Department of Transportation's Office of Pipeline Safety. ;
- Developing standards, advanced materials and fire safety technologies; and
- Through the Minerals Management Service, assuring pipeline safety and integrity through regulation and inspection of offshore pipelines.

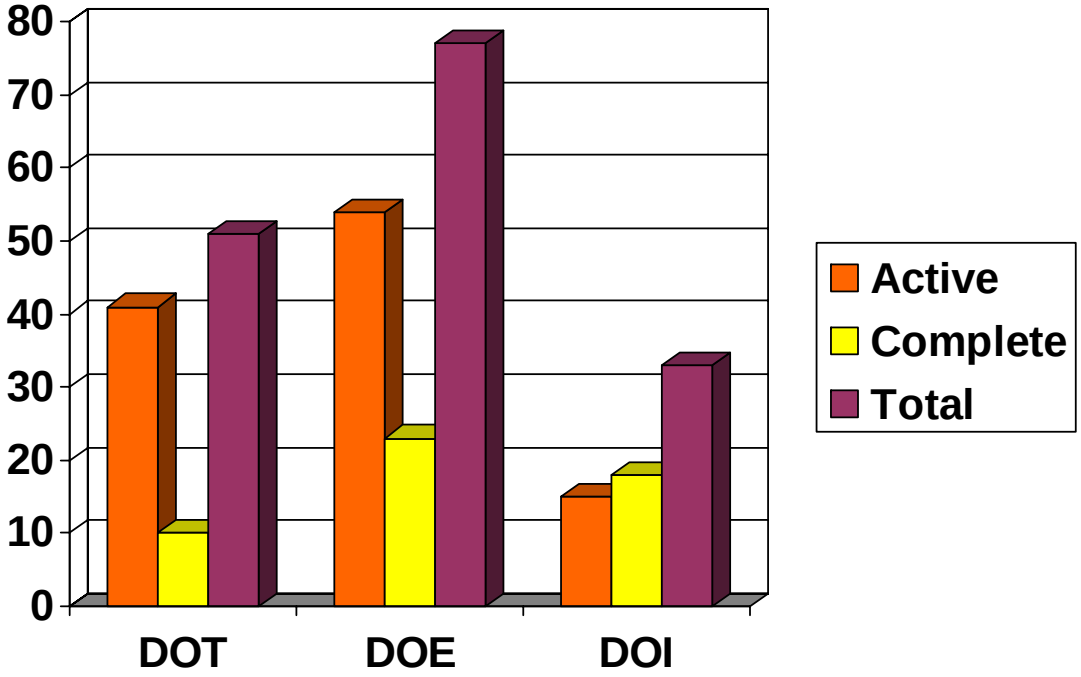
Program Award Summary*

Total Pipeline Research Expenditures

(FY '02,'03,'04 in millions)



Project Pipeline Awards Since FY 2002



* *NIST is not appropriated R&D monies to address PSIA 2002 technical subjects. NIST conducts pipeline related research for a fee and currently is under contract with DOT, DOE and other feds to conduct R&D that may address PSIA 2002 technical subjects.*

Recent Joint Funding Activities

Co-Funded by	Co-Funded Effort
	1. Steel Catenary Riser Flexjoint Design and Performance Project
NIST National Institute of Standards and Technology	2. An Assessment of Magnetization Effects on Hydrogen Cracking for Thick Walled Pipelines
	3. Steel Catenary Riser Integrity Management
	4. DW RUPE: Deepwater GOM Pipeline Damage Characteristics & Repair Options
	5. New Touch-Down Zone Solutions for Steel Catenary Risers
	6. Remote Sensing (Leak Detection) Technology Demonstration
	7. Advanced Sensor (Pipe Inspection) Technology Demonstration
NIST National Institute of Standards and Technology	8. Laboratory Research to update Consensus Standards
	9. Sensor to Platform Integration for Unpiggable Gas Pipelines

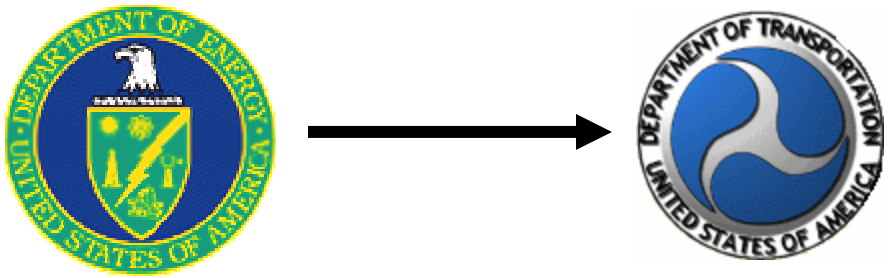
Six Consecutive Years of DOT & DOI Research Project Co-Funding

- Leveraging R&D resources on mutual jurisdictional areas offshore
- Co-funded 15 research projects (FY 2000 – FY 2005)
- Projects have focused on technology & risk assessments as well as standards development

Level of Success

Created a positive perception in the offshore pipeline industry, that regulators can effectively cooperate to pursue R&D efforts which promote safety, protection of the environment and address our energy needs

Research & Development Projects with Successful Hand-Offs



	Project Title	Research Contractor
1.	Application of Remote-Field Eddy Current Testing to Inspection of un-Piggable Pipelines - DTRS56-02-T-0001	Southwest Research Institute 6220 Culebra Road San Antonio, TX 78238-5166
2.	Mechanical Damage Inspection Using MFL Technology - DTRS56-02-T-0002	Battelle 505 King Ave. Columbus, OH 43201
3.	Hazardous Liquids Airborne Lidar Observation Study (HALOS) -DTRS56-04-T-0012	ITT Industries Space Systems 1447 St. Paul Street, Rochester, NY 14653

Technology Demonstrations

- Evaluate the merit of technologies that are reaching the prototype stage
- Expose the technologies to the environment in which the technology must be operated successfully
- Promote the deployment and utilization of new technologies through observations and participation by pipeline operators, equipment vendors, standards organizations, and pipeline safety officials
- Just one stage in a technology transfer process but can be considered a major milestone for achieving an ultimate research goal.

Two Technology Demonstrations Held

1. Remote Sensing of Natural Gas Leaks
Rocky Mountain Oilfield Testing Center
September 13-17, 2004
Casper, Wyoming

2. Internal Inspection of non-Piggable Gas Pipelines
Battelle's Pipeline Simulation Facility
September 13-17, 2004
Columbus, Ohio

Joint Government/Industry Pipeline R&D Forum

The purpose of the forum is to identify the impacts, opportunities, and needs arising from the R&D provisions of the Pipeline Safety Improvement Act of 2002 (PSIA) from the perspective of relevant government agencies, industry, and pipeline R&D funding organizations and to identify the key challenges facing industry and government, current research efforts, and potential research that can help to meet these challenges.

Benefits & Outputs:

1. Provides a consensus list of R&D gaps and challenges that can validate current research focus and topics for future solicitations

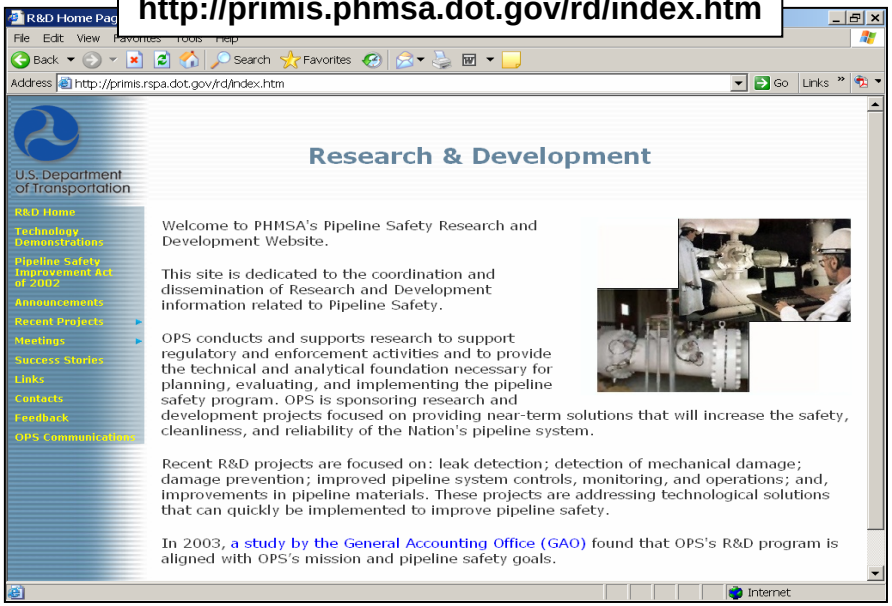
2. Allows for information dissemination both at program & project levels

3. Provides program and project feedback that can be used as part of a peer review process

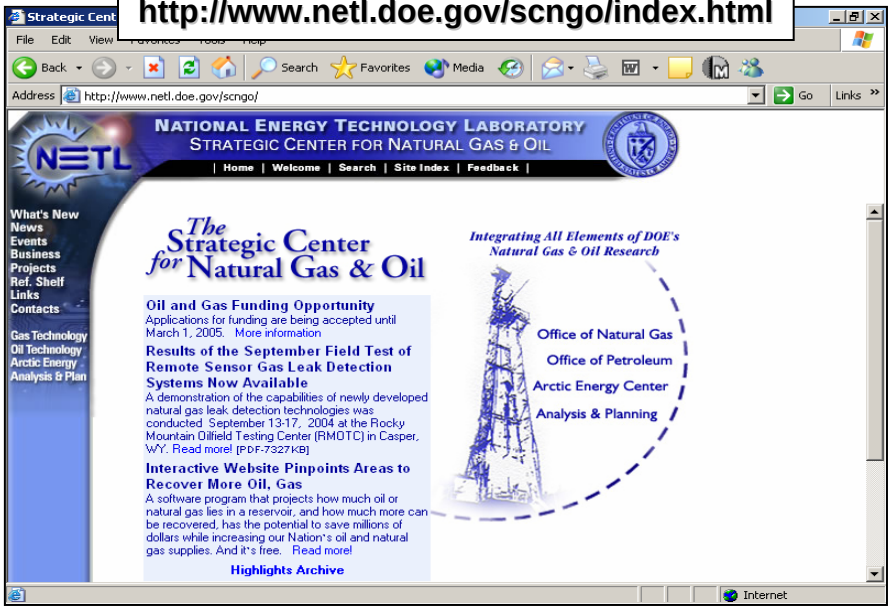
4. Contributes to a positive perception that government and industry can work together to develop new technologies and improve safety

Pipeline R&D Program Websites

http://primis.phmsa.dot.gov/rd/index.htm

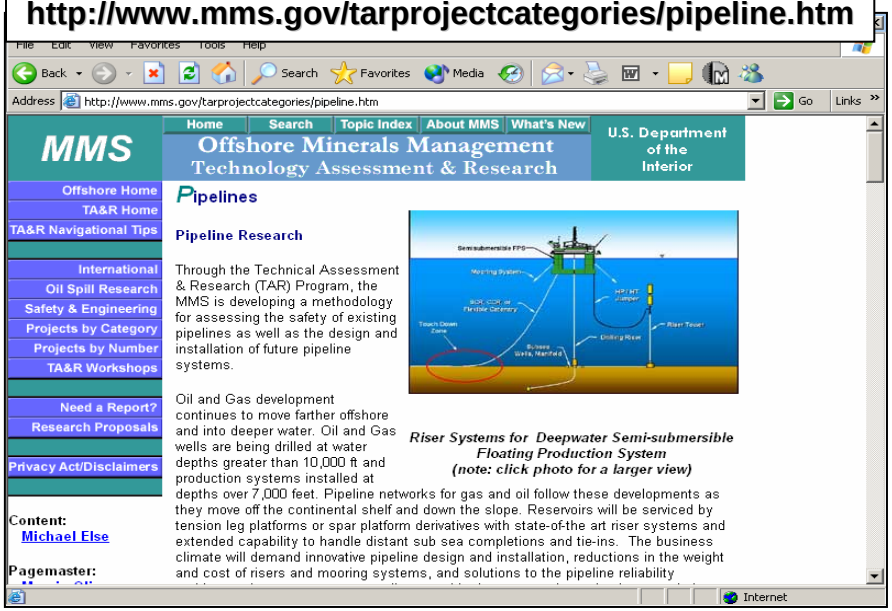


http://www.netl.doe.gov/scngo/index.html

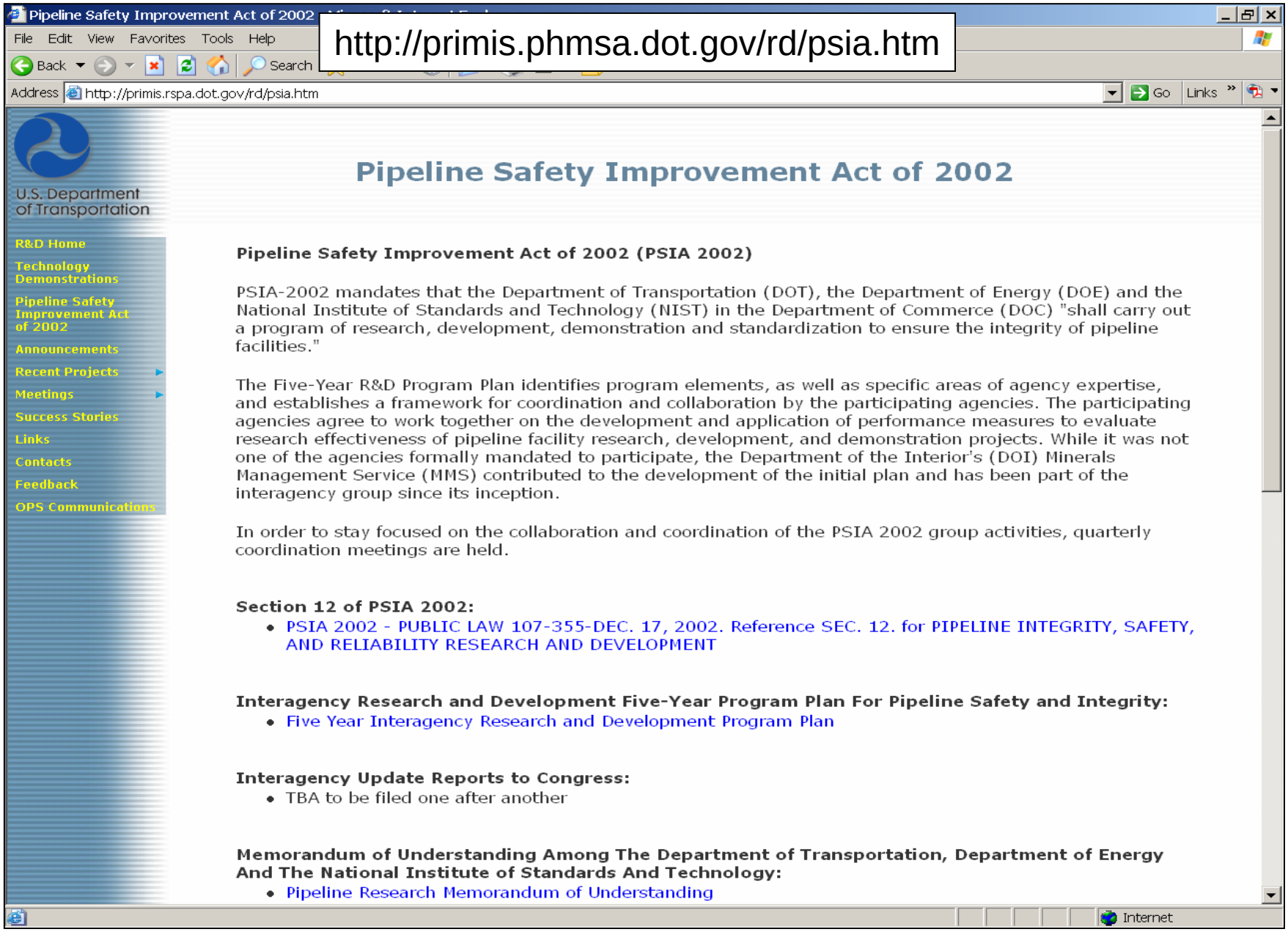


http://www.metallurgy.nist.gov/

http://www.mms.gov/tarprojectcategories/pipeline.htm



Interagency Website for Section 12 of PSIA 2002



Joint Items/Events – Fiscal 2005

Who is Involved	Fiscal 2005 Collaborative Activities and Milestones	Date
	Interagency Coordination Meeting	October 20, 2004
	Road Mapping Workshop on Liquefied Natural Gas	November 8-9, 2004
	Joint Review of DOI/MMS Research Solicitation Submissions	December, 2004
	Transportation Research Board's 84th Annual Meeting	January 11, 2005
	GTI/DOE Gas Technology Conference	Jan 30 – Feb 2, 2005
	Interagency Coordination Meeting	February 2005
	Government/Industry Pipeline R&D Forum	March 22-24, 2005
	Interagency Coordination Meeting	May 2005
	Interagency Coordination Meeting	September 2005

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