MEMORANDUM OF UNDERSTANDING

AMONG THE

U.S. DEPARTMENT OF TRANSPORTATION

U.S. DEPARTMENT OF ENERGY

AND

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

on Pipeline Integrity, Safety, and Reliability Research and Development

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to detail the responsibilities of the U.S. Department of Transportation (DOT), the U.S. Department of Energy (DOE), and the National Institute of Standards and Technology (NIST) (together, "the Participating Agencies") in a program of research, development, demonstration, and standardization to ensure the integrity of pipeline facilities. This MOU identifies program elements, as well as specific areas of agency expertise, and establishes a framework for coordination and collaboration by the Participating Agencies

II. BACKGROUND

The United States is critically dependent on natural gas and petroleum liquids transported through pipelines. The pipeline infrastructure that currently transports these energy resources is facing age-related impacts on system integrity. While new pipelines are being constructed, pipeline operators typically plan on continued operation of the vast majority of existing pipeline mileage. Ensuring the long-term integrity and security of these existing pipelines through the application of improved technology is essential.

Section 12 of the *Pipeline Safety Improvement Act of 2002* ("the Act"), Public Law 107-355, requires the Participating Agencies to carry out a program of research, development, demonstration, and standardization to ensure the integrity of pipeline facilities. Furthermore, the Act requires the Participating Agencies to enter into an MOU detailing their respective responsibilities, and to periodically report to Congress on program plans and implementation status.

The Participating Agencies recognize the need to work together to identify pipeline facility research priorities, discern the most promising research proposals, avoid duplication of research and development efforts, assure coordination and collaboration, advance technological solutions,

and involve outside stakeholders. Consistent with the Act, and in recognition that pipeline integrity is a shared responsibility, the Participating Agencies enter into this MOU.

III. AUTHORITY

A. DOT enters into this MOU under authority of P.L. 107-355 §12, 49 U.S.C. §§ 60101 *et seq.* and 322, and 49 C.F.R. §§ 1.45(a) and 1.53.

B. DOE enters into this MOU under authority of P.L. 107-355 § 12 and 42 U.S.C. § 7101 *et seq.*

C. NIST enters into this MOU under authority of P.L. 107-355 § 12 and 15 U.S.C. § 271 *et seq.*

IV. RESPONSIBILITIES OF PARTICIPATING AGENCIES

A. Program Elements: The Act requires the Participating Agencies to carry out a program that includes research, development, demonstration, and standardization activities related to the following elements:

1. Materials inspection;

2. Stress and fracture analysis, detection of cracks, corrosion, abrasion, and other abnormalities inside pipelines that lead to pipeline failure, and development of new equipment or technologies that are inserted into pipelines to detect anomalies;

3. Internal inspection and leak detection technologies, including detection of leaks at very low volumes;

4. Methods of analyzing content of pipeline throughput;

5. Pipeline security, including improving the real-time surveillance of pipeline rights-of-way, developing tools for evaluating and enhancing pipeline security and infrastructure, reducing natural, technological, and terrorists threats, and protecting first response units and persons near an incident;

6. Risk assessment methodology, including vulnerability assessment and reduction of third-party damage;

7. Communication, control, and information systems surety;

8. Fire safety of pipelines;

9. Improved excavation, construction, and repair technologies; and

10. Other appropriate elements.

B. Areas of Agency Expertise: Each Participating Agency has primary responsibility for implementing program elements within its expertise:

1. DOT's Research and Special Programs Administration (RSPA) has the lead role in pipeline facility research, development, demonstration, and standardization as it pertains to natural gas and hazardous liquid pipeline safety, integrity management, and damage prevention. RSPA will focus its efforts on short-term to mid-term research and development projects that will quickly bring the results to industry and market. In addition, RSPA will lead the Participating Agencies in preparing and transmitting the five-year program plan to Congress. RSPA will carry out this responsibility through its Office of Pipeline Safety (OPS).

2. DOE has the lead role in pipeline facility research, development, demonstration, and standardization as it pertains to pipeline reliability, deliverability, and surveillance. DOE will focus its research efforts on advanced and innovative, mid-term to long-term research and development on the next generation of infrastructure technologies.

3. NIST has the lead responsibility in pipeline material research, development, and demonstration, pipeline fire safety, and will serve as liaison with private sector consensus standards organizations as it pertains to natural gas and hazardous liquid pipeline safety, reliability, and damage prevention.

C. Program Plan

1. The Act requires the Secretary of Transportation, in coordination with the Secretary of Energy and the Director of NIST, to prepare and transmit to Congress a five-year program plan not later than December 17, 2003. The program plan will guide program activities based on this MOU and take into account the related activities of other Federal agencies, including the U.S. Department of Interior's Minerals Management Service. The program plan will be submitted to RSPA's Technical Pipeline Safety Standards Committee and Technical Hazardous Liquid Pipeline Safety Standards Committee for review and will include the comments of the committees.

2. In preparing the program plan and establishing project priorities, the Secretary of Transportation will consult with appropriate representatives of the pipeline industry, utilities, manufacturers, academia, other Federal agencies, pipeline research institutes, national laboratories, State pipeline safety officials, labor organizations, environmental organizations, pipeline safety advocates, and professional and technical societies.

D. Annual Reports to Congress: Not later than December 17, 2003, one year after enactment of the Act, and annually thereafter, the heads of the Participating Agencies must jointly transmit to Congress a report on the status and results to date of the implementation of the program plan.

E. Coordination and Collaboration

1. The Participating Agencies agree to coordinate research, development, demonstration, and standardization activities in order to achieve an optimal division of labor and resources. This coordination may include:
    - Preparation and early review of planned solicitations and competitive or sole-source announcements;
    - Participation in reviewing research white papers and full proposals received by a Participating Agency;
    - Consultation on schedules for the solicitation of research projects;
    - Exchange of technical information;
    - Participation in workshops or technical sessions held by any of the Participating Agencies, academia, research institutes or organizations, other government agencies, or other entities involved in pipeline research, development, demonstration, or standardization;
    - Joint conduct of workshops or technical sessions;
    - Dissemination of technological solutions identified through research, development, and demonstration projects;
    - Consultation on standardization issues;
    - Exchange visits of individuals sponsored by the Participating Agencies; and
    - Review of research findings of international organizations involved in pipeline safety, integrity, and reliability research.

2. The Participating Agencies agree to disseminate in accordance with applicable law the technological solutions identified through research, development, and demonstration projects conducted to advance the safety, integrity, and reliability of the natural gas and hazardous liquid pipeline infrastructure. This may include dissemination through workshops, technical sessions, conferences, press releases, websites, or standards. This also may include the development of public abstracts to clearly communicate research findings and interim results.

3. The Participating Agencies agree to work together on the development and application of performance measures to evaluate research effectiveness of pipeline facility research, development, and demonstration projects. This may include a requirement that those who respond to solicitations include measures of project effectiveness as part of the proposal.

V. General Provisions

A. Program Funding. Nothing in this MOU obligates the Participating Agencies to request a certain budget level, request appropriations, enter into any contract or other obligation, or impose specific programming obligations on any party. All provisions in this MOU are subject to the availability of funds.

B. Amendment. This MOU may be amended by written agreement among the Participating Agencies.

C. Rights and Benefits. Nothing in this MOU is intended to diminish or otherwise affect the authority of any Participating Agency to carry out its statutory, regulatory, or other official functions, rights and responsibilities nor is it intended to create any right or benefit, substantive or procedural, enforceable at law by any party against the United States, its agencies or officers, or any other person.

VI. AGENCY CONTACTS

The Participating Agencies designate the following principal contacts for each agency. These contacts may be changed at the discretion of the Participating Agency upon notice to the other Participating Agencies.

Department of Transportation

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Department of Energy

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National Institute of Standards and Technology

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VII. DURATION OF THE MOU

This MOU is effective from the date of final signature of the Participating Agencies, and remains in effect for five (5) years, unless extended or terminated by a Participating Agency upon sixty (60) days written notice to the other Participating Agencies. Each of the signatories to this MOU has been authorized to sign the MOU on behalf of his respective Participating Agency.

Samuel G. Bonasso
Deputy Administrator
Research and Special Programs Administration
Department of Transportation

1.20.04
Date

Carl Michael Smith
Assistant Secretary, Office of Fossil Energy
Department of Energy

1/20/04
Date

Arden L. Bement, Jr.
Director, National Institute of Standards and Technology
National Institute for Standards and Technology

1-20-04
Date