

# U.S. Minerals Management Service Offshore Pipeline Challenges and Research



Given by:

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# Background

## Minerals Management Service (MMS)

- MMS became an official agency of the Interior Dept. in 1982
- *Mission:* Managing the mineral resources (such as oil and natural gas) in Federal waters offshore of the United States and for collecting and disbursing the revenues from the production of these resources.
- MMS was given this congressional mandate and jurisdiction through the Outer Continental Shelf (OCS) Lands Act (43 U.S.C. 1344)

## Technology Assessment and Research Program (TARP)

- Established in the 1970's to ensure that industry operations on the OCS incorporated the use of the best available and safest technologies
- The TAR Program supports research associated with operational safety and pollution prevention as well as oil-spill response and cleanup capabilities
- Pipeline research is just one component of this program

# Pipeline Research Focus

**To be able to assess the safety, risks, and reliability of offshore pipelines, the TAR Program will fund projects in the following areas/categories:**

1. Corrosion of pipelines;
2. Repair and inspection of pipelines;
3. Risk assessment and reliability of pipelines;
4. Identification and mitigation of geo-hazards on pipelines; and
5. Operational development issues related to pipelines (i.e. hydrotesting, leakage).

# Current Offshore Challenges

- Installation of large diameter pipelines in deepwater (weight of steel)
- Multiphase & deepwater leak detection
- Vortex Induced Vibrations on Steel Catenary Risers (SCR's)
- Lack of knowledge/understanding of Metocean Data
- Repair of SCR's and deepwater pipelines
- Pipe/Soil interaction
- Pipeline Commissioning (Effective Hydrotests & water handling)
- High temperature/pressure service (thermal buckling)
- Antiquated or lack of Codes and Standards

# Solutions Through Research

## New Construction, Materials and Welding

*Strain-Based Design of Pipelines (Edison Welding Institute)*

*Safe Design of Hot On-Bottom Pipelines with Lateral Buckling (Boreas Consulting Ltd.)*

## Detection and Assessment

*Evaluation of Methods of Detecting and Monitoring of Corrosion Damage in Risers (Edison Welding Institute)*

*Intelligent Systems for Pipeline Infrastructure Reliability (Natural Resources Canada)*

*World Wide Assessment of Industry Leak Detection Capabilities for Single and Multiphase Pipelines (Texas A&M University)*

# Solutions Through Research (continued)

## Other Types of Projects

*2003 International Offshore Pipeline Workshop (Project Consulting Services, Inc.)*

*An Assessment of Safety, Risks and Costs Associated With Subsea Pipeline Removals (Scandpower Risk Management Inc.)*

# Focusing on FY 2004

**In a Broad Agency Announcement (BAA) for FY 2004 issued this past fall, the MMS has the following two pipeline research topics:**

- 1. Assessment of the reliability and integrity of large diameter Steel Compliant Risers relative to ultra-deepwater operations*
- 2. Assessment of the current and potential technologies and capabilities for automatic controlling and testing systems for mainline valves on subsea pipelines*

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**Offshore Minerals Management Technology Assessment & Research**

**Technology Assessment & Research (TA&R) Program**

The TA&R Program is a research element encompassed by the MMS Regulatory Program. The TA&R Program supports research associated with operational safety and pollution prevention as well as oilspill response and cleanup capabilities. The TA&R Program was established in the 1970's to ensure that industry operations on the Outer Continental Shelf incorporated the use of the Best Available and Safest Technologies (BAST) subsequently required through the 1978 OCSLA amendments. The TA&R Program is comprised of two functional research activities:

[Operational Safety and Engineering Research \(OS&ER\)](#)      [Oil Spill Research \(OSR\)](#)

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The TA&R Program has four primary objectives:

**1. Technical Support**

Providing engineering support to MMS decision makers in evaluating industry operational proposals and related technical issues and ensuring that these proposals comply with applicable regulations, rules, and operational guidelines, and

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# **Thank You!**

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