

Managing Pipeline Integrity: “A Systematic Approach”

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Managing Pipeline Integrity

- **Integrity** - The state or quality of being entire or complete; wholeness; unbroken state;
 - In Control of the Operation
 - Know What is Going On (Monitoring)
 - Take Action to Prevent Occurrence of Incidents (Mitigation)
- **Management** - The manner of treating, directing, carrying on, or using, for a purpose; guidance; control;
 - Understand How Incidents Could Happen(Continual Assessment)
 - Guidance on How to Control Risk (Risk Analysis)
 - Plan, Processes, and Procedures
 - Training and Personnel Performance

ASME B31.8

- **ANSI Approved Standard**
- **International Standard**
- **Design, Construction, and Operation**
- **Gas Transmission and Distribution Piping Systems**

ASME B31.8S

- **Integrity Management Supplement**
- **Development Team began in 1999**
 - **Industry,**
 - **Federal and State Regulators**
 - **Research and Development Organizations**
 - **Consultants**
- **Based on Research and Technical Reports**
- **Guidance for Compliance and Consistency**
- **Prescriptive and Performance-Based Approach**
- **Guide for Integrity Management Program**

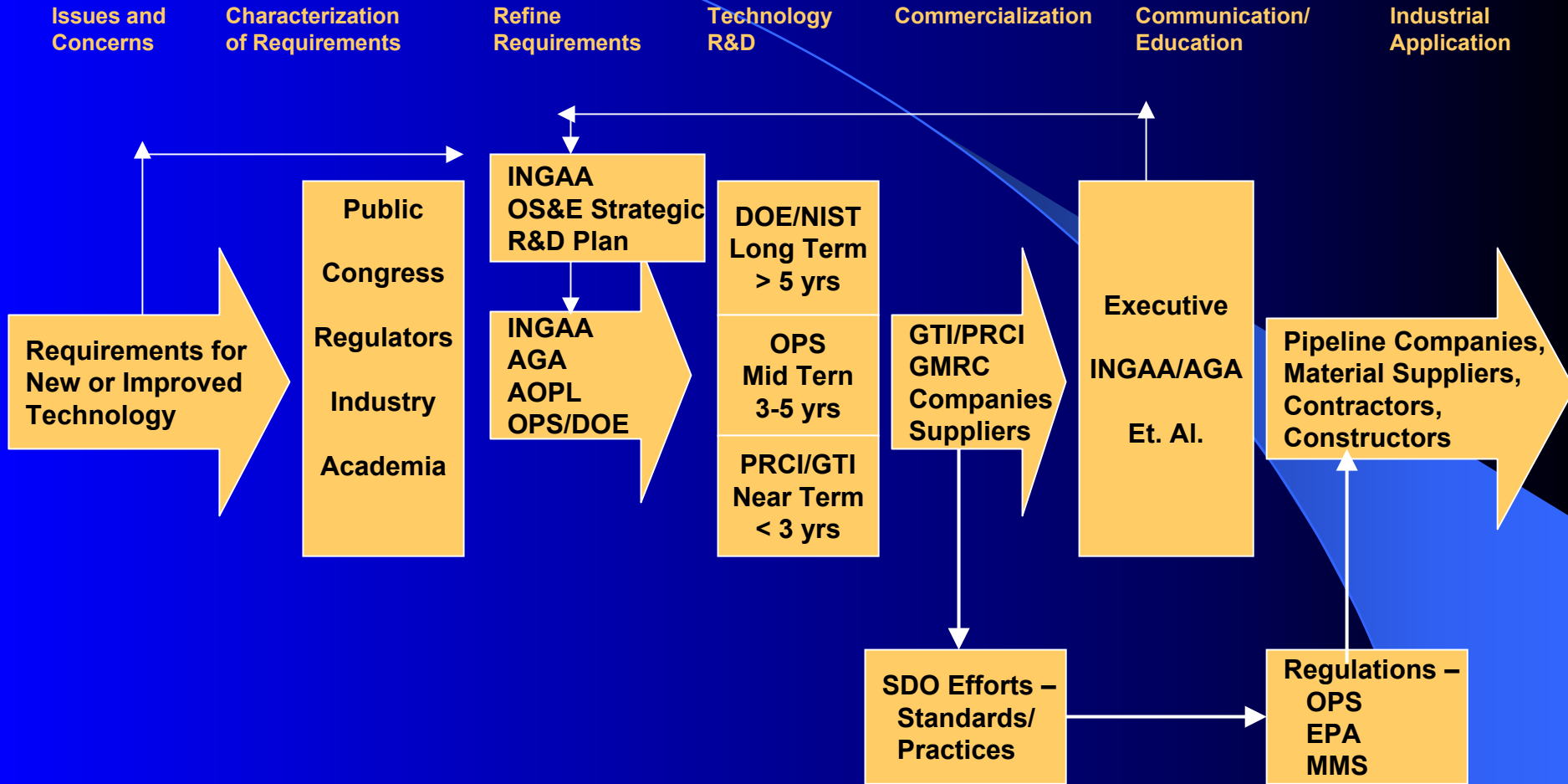
Integrity Management Principles

- Engineered into new Pipeline Systems
- Dynamic and Customized to Meet Operators Needs
- Organization, Processes, and Physical System
- Information Integration
- Risk Assessment
- Continuous Process
- New Technology
- Performance Measurement
- Communication

B31.8S Supporting Research

- **Evaluation of P/L Design Factors**
- **Model for Sizing High Consequence Areas**
- **Prevention, Detection, and Mitigation**
- **Direct Assessment and Validation**
- **Leak vs. Rupture Considerations for Low Stress Pipe**
- **Implementation Plan for Re-verification for High Consequence Intervals**
- **Smart Pigging**
- **Review of Pressure Testing**
- **Proposed Guidelines for Assessment of Dents and Mechanical Damage**

Gas Pipeline Industry Technology Development



Entities Involved in R&D

GPTC
GMRC
DOE/NETL
GTI
PRCI

OPS
NIST

INGAA
AGA
APGA

ASME
API, etc.

Pipeline Cos.
Suppliers
Public
Academia
OPS/States

B31.8S - Integrity Management Program

- **Integrity Management Plan**
- **Data Integration Process**
- **Program Evaluation Plan**
- **Communications Plan**
- **Management of Change Plan**
- **Quality Control Plan**

ASME B31.8S - Integrity Management Process

