Integrating R&D in the New Environment

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Our Challenge, Operating in a Series/Parallel Environment

- Issue Clarification
- Research
- Development
- Standards
- Regulatory Acceptance
- Commercialization
- Implementation
- Performance Measurement

Examples - Issue Clarification

- Engine Emissions
  - *Updating Engine Information Database*
- Security Planning
  - *Regional Security Modeling*
- Gas Quality Issues
  - *Gas Quality of Infrastructure*
  - *New Issues Concerning Gas Quality*
- Vintage Pipe Issues
  - *Vintage Pipe Report*
- Backfill Methods
  - *Performance of Present Construction Systems*
- Future of the Pipeline Industry
  - *Update of the 30TCF Report*
- SCADA and Gas Control Operation
  - *OPS Investigation*
- Fire Prevention
  - *Engine/Turbine Fire Prevention Mitigation*
- Right of Way Encroachment
  - *Transportation Research Board Support*

Examples - Research

- PRCI R&D Agenda
  - Pipeline Centric
- DOE R&D Agenda
  - Storage
  - LNG
  - Reliability
  - Efficiency
- OPS R&D Agenda
  - Safety Focus

Examples - Development

- PRCI
  - External Corrosion Direct Assessment
- GTI/AGA
  - External Corrosion Direct Assessment

Example - Standards

- Integrity Standards
  - *ASME B31.8s*
- Direct Assessment
  - NACE ECDA
  - NACE ICDA
- Inline Inspection
  - Inspector Standards
  - Process Standards
- Operator Qualification Standards
  - *ASME B31.Q*
- *LNG*
  - NFPA 59A
- Public Communication
  - *API 1162*

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Example - Regulatory Acceptance

- Direct Assessment
  - ECDA Development Work
- Environmental Mitigation on Construction
  - *FERC Plans and Procedures Development*
- Integrity Inspection Process
  - *Verification of ICDA*
- Vintage Pipeline Performance
  - *Vintage Pipeline Report*
- Security Planning
  - *Regional Security Modeling*
- Integrity Rule
  - *Integrity Workshops*
- Gas Quality
  - *New Issues Concerning Gas Quality*
- Electronic Filing
  - *Mapping and Certificate Standards*

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Commercialization

- Public Education
  - *New Construction Communication (Wirthlin)*
- Data Integration
  - ISAT
  - PODS

Example - Implementation Issues

- Natural Gas Pipeline Integrity Rule
  - *Integrity Workshops*
  - Developing Plans
    - *Vintage Pipe Report*
    - *Gas Quality Overview*
  - Mitigation Process
  - Data Integration
    - ISAT
    - PODS
    - Baseline Technology
  - Public Education
    - *Wirthlin Report*

Performance Measurement

- Integrity Program Performance
  - *National Pipeline Mapping*
  - *Integrity Plan Progress*
  - *OPS Audits and Protocols*
- Pipeline Safety Performance
  - *OPS Audit Management System*

We Must Be Sure We Have All These Steps Covered and Have a Plan to Deliver Them in Time

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