

Environmental Risk Assessment & Impact

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Session Overview

- Introductions
- Logistics
- Overview Presentations
 - Natural Gas Overview
 - Liquid Overview
 - Other Issues
- Technical Discussions
- Report Outs
- Prioritize Issues and Identify a Path Forward

Logistics

- Overview Presentations and Brainstorming (one hour)
- Break up and attend Technical Sessions
 - Damage Prevention – Continental Room
 - Direct Assessment – Oak Room
 - Inspection/Repair/Leak Detection – Consort II
 - Design/Construction/Materials/Welding – Embassy Room
 - Facilities/Compression/LNG – Executive Room

Logistics (cont.)

- **Each Technical Session**
 - Environmental Representation
 - Select Reporter
 - Work environmental gaps
 - Determine if the solution is purely technical, purely environmental or a combination of both
 - Work all but purely environmental issues in Technical Sessions

Report Out

- 5 – 10 minute report out
 - Issues identified
 - Technology only, environmental only, both
 - Potential path forward
- OPS project Overview
- Brainstorm other issues
- Prioritize issues and challenges (Top 5)

Path Forward

- Path forward and potential barriers

1. *Does this technical gap or challenge require a new/revised tool or technology to be developed?*

2. *Does the solution require new or revisions to codes, standards, guidelines or recommended practices?*

3. *Is a conventional technology development effort with corresponding codes & standards work sufficient to push the item into usage, or are other development/application efforts required?*

Thursday Report Out

- Session Summary
- Top 5 Issues and Challenges
- Consensus R&D Project Opportunities
- Future research that is required

Identified Gaps

- Develop a coordinated national and state GHG inventory protocol
- Develop new tools, standards and best practices to control and manage emissions
- Managing particulate emission impacts
- Having reasonable permitting needs to both sides with proper hearing reasonable exchange of opinions

Identified Gaps (cont.)

- Improve consistency of activities for assessment & impact during construction and repair, including the development of better practices
- Managing habitat fragmentation, disposal of hydrotest waters, improved communications between operators, regulators and public
- Minimizing greenhouse gases
- Developing practical air emission standards
- Improving public perception & knowledge, permitting lead time, regulatory consistency

Manage Air Emissions

- Greenhouse Gases
 - Gap
 - Protocol – Inventory and Quantification
 - Measurement
 - Potential R&D
 - Emission factor updates and reconciliation
 - Direct and Indirect emission quantification
 - Fugitive emission quantification
 - Protocol Standard
 - Best Management Operational Practices
 - Measurement Technology
 - Barriers
 - Cross cutting issue that requires coordination

Manage Air Emissions

- Particulates
 - Gap
 - Potential R&D

Manage Air Emissions

- **Criteria Pollutants**
 - Gap
 - Continuing change of end game
 - **Potential R&D**
 - Combustion research (IC engines, turbines)
 - Parametric monitoring for the purpose of predicting emissions and compliance
 - Air emission control device evaluations
 - Stack testing methods
 - Measurement and Protocol
 - Gas Quality
 - **Barriers**
 - Understanding of technology and what regulatory implications it brings (permit classification)

Permitting & Construction

- Permit Timing & Planning
 - Gap
 - Streamlined Permitting – on-going DOT efforts
 - Minimization of Catastrophic Events
 - Potential R&D
 - Cumulative Effects for construction
 - Best Management Practices
 - Establish Size Of Working Area (Footprint)
 - Define Project Procedures
 - BMP's for Known T & E Species
 - Mitigation in agricultural areas
 - Biological Windows
 - GIS Standard
 - Barriers
 - Regulatory and Jurisdictional Barriers

Information Sharing

- Information Sharing/Communication
 - Gap
 - Potential R&D
 - GIS
 - Standards
 - Best Practices
 - Public Perception
 - Articulate Industry Goal

Waste & Remediation

- Waste generation volumes
 - Potential R&D
 - Alternate media
 - Barriers
 - Regulations on collection
- Remediation
 - Gap – None

R&D

- Knowledge base
- Pure research
- Standards development
- Environmental