

Hazardous Liquids Pipeline Industry Perspective on Excavation Damage Prevention

Pipeline Safety Trust Conference

November 2010

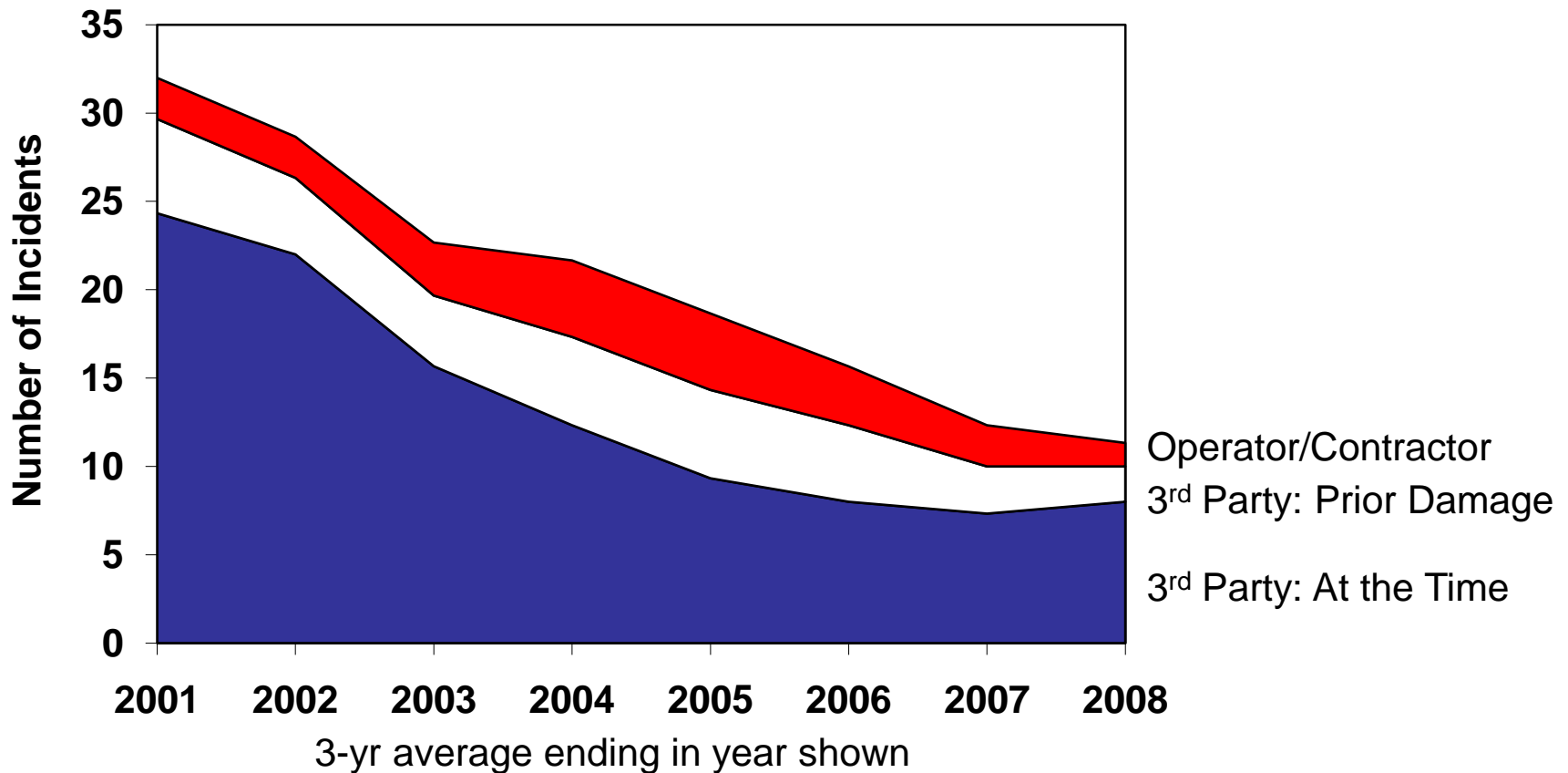
Peter Lidiak, API

Low frequency; High consequence

- Excavation damage NOT the leading cause of reportable hazardous liquids pipeline accidents
 - About 7% of all HL pipeline accidents from 1999 to 2008
 - It is improving over time
 - It IS the leading cause of injuries and deaths
 - 61% of fatalities
 - 40% of injuries
 - That's why the industry is so focused on reducing excavation damage
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66% Decline in Third Party Hits Causing Immediate Failure



* Includes onshore HL pipeline incidents ≥ 5 barrels or death, injury, fire or explosion

Who are these various parties?

Third Parties

- Landowners (farmers, homeowners, tenants)
- Road construction crews
- Residential/commercial development, etc.
- "One-call Partners" (pipelines and other underground utilities that pay for "call before you dig" systems)

First Parties

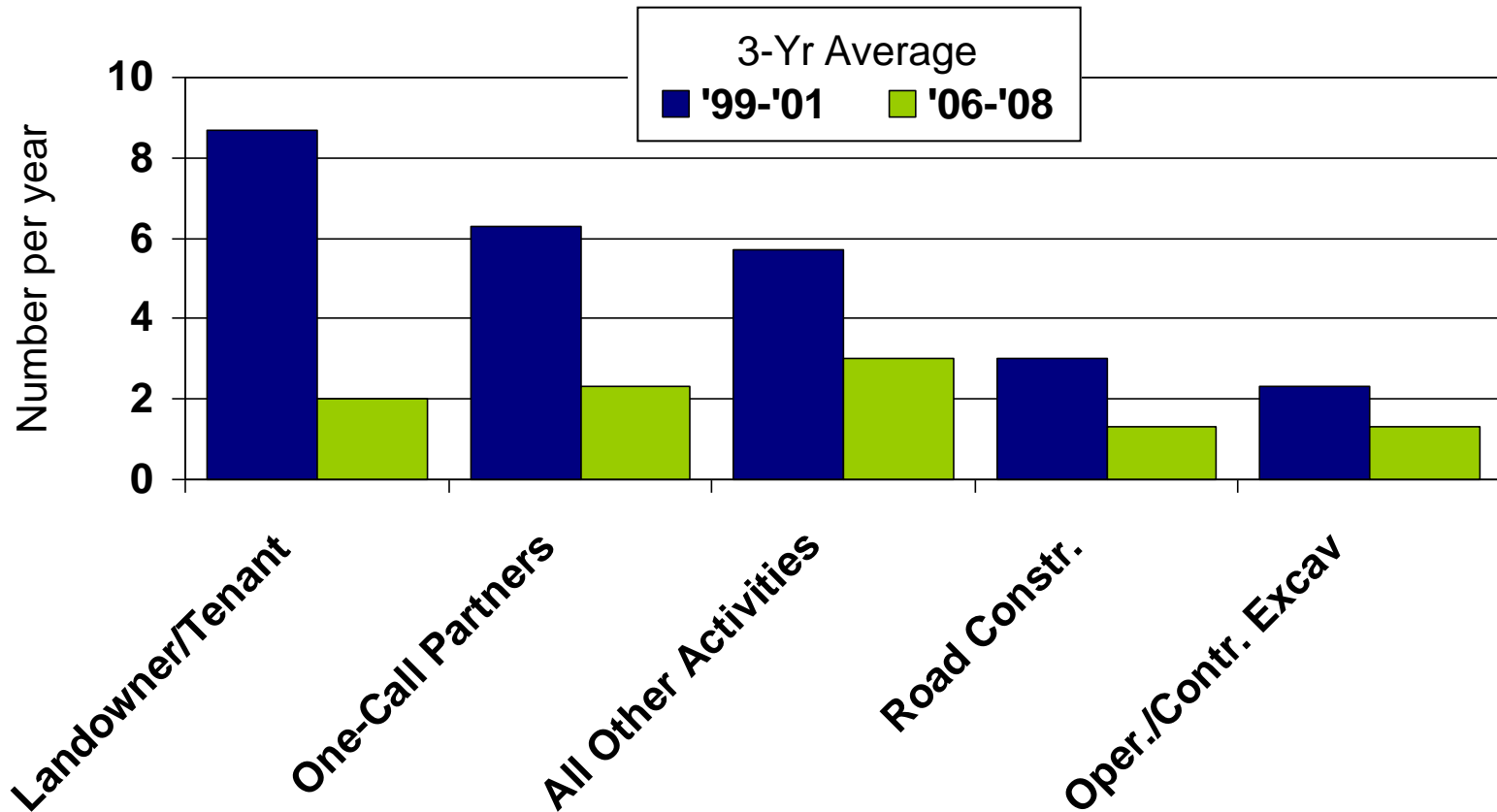
- Pipeline Operator's Personnel

Second Parties

- Pipeline Operator's Contractors
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Diverse Sources of Excavation Damage; Diverse Strategies for Improvement



Landowner/Tenant is Farming Activities + Homeowners

One-Call Partners are other pipelines and underground facilities operators

All Other Activities include residential/commercial development, railroad, waterway, "other"

So what have we done to reduce excavation damage?

- **Public Awareness Programs** – we really do want people along the right-of-way to know about pipelines
 - Respect for the hazards of pipelines, but not fear of them
 - Pipelines are the safest and most reliable way to move energy products
 - The public can be our eyes and ears
 - **Common Ground Alliance and 811**
 - Supported the creation of CGA and the rollout of the 811 Call Before You Dig Campaign
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And also . . .

- **Industry advisories:** statistics and subject matter experts' considerations for operator improvement.
 - **Industry workshops:** first, second and third parties, aerial patrol safety and effectiveness, directional drilling, locating and marking practices.
 - Supported the **nine elements for effective state damage prevention programs**
 - Advocating for stronger state programs with **fewer exemptions from one-call**
 - **Participation in PIPA:** better planning practices, collaboratively developed
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What else are we tackling?

- **Corrosion** – better assessment tools and practices (NACE corrosion standards; PPTS corrosion advisories)
 - **Operator error** – addressing human factors (better data; advisories)
 - **Control Room** – annual Control Room Forums, RP 1168 on Control Room Management, Gas Control Guideline and RP 1167 on Alarm Management, Control Room Rule
 - **Construction and Materials Standards** – higher strength pipe (API 5L), improved welding practices (API 1104), construction standards (ASME B31.4 & B31.8), INGAA Foundation work groups
 - Emphasis of **Quality Standards** (ISO 29001/API Q1 for the Oil and Gas Industry; INGAA QMS White Paper; Services Quality Std.)
 - Pipeline Research Council International -- \$36.3MM of **Pipeline Research and Development** in just the last 5 years
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EXCAVATION DAMAGE PREVENTION IS A SHARED RESPONSIBILITY
