Using Collaboration to Reduce Risk
While Improving Productivity

Presentation to: Pipeline Safety Trust
Name: Christopher A. Hart
Date: November 17, 2011
The Contrast

- Conventional Wisdom:
  Improvements that reduce risk usually also reduce productivity

- Lesson Learned from Proactive Aviation Safety Information Programs:
  Risk can be reduced in a way that also results in immediate productivity improvements
Process Plus Fuel Creates A Win-Win

System Think - Process

Information From Front Lines

Improved Safety - AND - Improved Productivity

November 17, 2011 Pipeline Safety Trust
The Context: Increasing Complexity

- More System **Interdependencies**
  - Large, complex, interactive system
  - Often tightly coupled
  - Hi-tech components
  - Continuous innovation
  - Ongoing evolution

- Safety Issues Are More Likely to Involve **Interactions Between Parts of the System**
Effects of Increasing Complexity:

More “Human Error” Because

- System More Likely to be Error Prone
- Operators More Likely to Encounter Unanticipated Situations
- Operators More Likely to Encounter Situations in Which “By the Book” May Not Be Optimal ( “workarounds” )
The Result:

Front-Line Staff Who Are

- Highly Trained
- Competent
- Experienced,
- Trying to Do the Right Thing, and
- Proud of Doing It Well

. . . Yet They Still Commit

Inadvertent Human Errors
Fix the Person or the System?

Is the Person Clumsy?

Or Is the Problem . . .

The Step???
Enhance Understanding of Person/System Interactions By:

- Collecting,
- Analyzing, and
- Sharing Information
Objectives:
Make the System

(a) Less Error Prone
and
(b) More Error Tolerant
To Err Is Human:
Building a Safer Health System

“The focus must shift from blaming individuals for past errors to a focus on preventing future errors by designing safety into the system.”

Institute of Medicine, Committee on Quality of Health Care in America, 1999
Current System Data Flow

Most Data Lost Forever

Currently Only a Minute Portion of Data is Collected and Analyzed
Heinrich Pyramid

ACCIDENTS

NEAR MISSES

UNREPORTED OCCURRENCES

INCIDENTS

Mandatory Reporting

Voluntary Reporting

November 17, 2011 Pipeline Safety Trust
Major Source of Information: Hands-On “Front-Line” Employees

“We Knew About That Problem”

(and we knew it might hurt someone sooner or later)
Legal Concerns That Discourage Collection, Analysis, and Sharing

• Public Disclosure
• Job Sanctions and/or Enforcement
• Criminal Sanctions
• Civil Litigation
Typical “Cultural” Barrier

CEO

“Safety First”

Middle Management

“Production First”

Front-Line Employees

“Please the Boss First… THEN Consider Safety?”

November 17, 2011 Pipeline Safety Trust
Next Challenge

Legal/Cultural Issues

As we begin to get over the first hurdle, we must start working on the next one . . .

Improved Analytical Tools
Information Overload

"EUREKA! MORE INFORMATION!"

© 1996 Ted Goff
From Data to Information

Tools and processes to convert large quantities of data into useful information

Data Sources
- Info from front line staff and other sources

Analysts

Tools and Processes

Smart Decisions
- Identify issues
- PRIORITIZE!!!
- Develop solutions
- Evaluate interventions

November 17, 2011
Pipeline Safety Trust
Aviation Success Story

65% Decrease in Fatal Accident Rate, 1997 - 2007

largely because of System Think

fueled by Proactive Safety Information Programs

P.S. Aviation was already considered VERY SAFE in 1997!!
Aviation “System Think” Success

• Engage All Participants In Identifying Problems and Developing and Evaluating Remedies

• Airlines

• Manufacturers
  – With the systemwide effort
  – With their own end users

• Air Traffic Organizations

• Labor
  – Pilots
  – Mechanics
  – Air traffic controllers

• Regulator(s) [Query: Investigator(s)?]
Major Paradigm Shift

- **Old:** The regulator identifies a problem, develops solutions
  - Industry skeptical of regulator’s understanding of the problem
  - Industry fights regulator’s solution and/or implements it begrudgingly

- **New:** Collaborative “System Think”
  - Industry involved in indentifying problem
  - Industry “buy-in” re solution because everyone had input, everyone’s interests considered
  - Prompt and willing implementation
  - Solution probably more effective and efficient
  - Unintended consequences much less likely
Challenges of Collaboration

– Requires all to be willing, in their enlightened self-interest, to leave their “comfort zone” and think of the System

– Not a democracy
  • Regulator must regulate

– Regulator probably not welcome

– Labor/Management issues between some participants

– Participants are potential co-defendants
The Role of Leadership

- Demonstrate Safety Commitment . . .

  But Acknowledge That Mistakes Will Happen

- Include “Us” (e.g., System) Issues,
  Not Just “You” (e.g., Training) Issues

- Make Safety a Middle Management Metric

  - Engage Labor Early

  - Include the System --

Manufacturers, Operators, Regulator(s), and Others

- Encourage and Facilitate Reporting
  - Provide Feedback

- Provide Adequate Resources

- Follow Through With Action
How The Regulator Can Help

- Emphasize importance of System issues *in addition to* (not *instead of*) worker issues
  
  - Encourage and participate in industry-wide “System Think”

- Facilitate collection and analysis of information
  
  • Clarify and announce *policies for protecting information and those who provide it*
  
  • Encourage other industry participants to do the same

- Recognize that *compliance* is very important, but the *mission is reducing systemic risk*
Thank You!!!

Questions?