Safety 360

Enhancing Worker Situational Awareness

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Figure adopted from: Jim Collins, *Good to Great*; HarperCollins Publishers, NY; 2001.
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Empowered workers

How do you know when everything works right?

[video clip link removed from this slide]
Institutional Level ISM

Facility Specific ISM

Activity Level Work Planning & Control
Activity-Level Work Planning and Control

Planning teams work together to:

- Identify scope of the work and steps necessary to complete it
- Identify and analyze the hazards associated with work site and each work step (this is not an academic exercise)
- Develop and implement controls to ensure work can be accomplished safely
- Perform work using the prescribed controls
- Identify and communicate future improvements for activity-level work
Activity-Level Work Planning and Control

- Where the integrated safety management rubber meets the road.
- Applicable to all types of work activities including operations, maintenance, R&D, D&D, construction, etc.
- Board reviews have identified inconsistencies and recurring weaknesses in implementation across the complex.
  - Hazards not identified or inappropriately addressed
  - Instructions not bounding or without sufficient detail
  - Work instructions cannot be performed as written
  - Oversight and self assessments are not always successful at identifying and correcting weaknesses and learning lessons
Improving Activity-Level Work Planning and Control

- URS is implementing its own recently developed work planning standard.
- EFCOG is working to develop a complex wide standard.
- A “Gold Standard” for how to develop a world-class work planning and control program would greatly benefit the complex. Don’t simply document what already exists.
- Ensure integration with the ISM and Oversight Guides and the work planning standard.
Institutional Level ISM

Facility Specific ISM

Activity Level Work Planning & Control
The Center Circle

- YOU are the center of your safety circle
- YOU are the main contributor to your own safety
- YOU are an important safety influence on those you work with
- YOU help ensure safety at your facility
- YOU are a leader in your workplace

Lead by Example!
Esprit de Corps

- Nobody should work in complete isolation
- You should be aware of what your coworkers are doing
- You should be sure they know what you are doing
- Share with them your concerns and observations
- Listen to their concerns and observations
- Keep an eye out for them, they will do the same for you

You all share your workplace, make it a safe one!
Mindfulness

- Remain actively aware of others in the workplace around you
- Watch for unexpected situations
- Be preoccupied with updating knowledge
- Anticipate the unexpected
- Avoid the arrogance of success
- Recognize near-misses as potential dangers; not successful avoidances

Anticipate the worst!
Be pleasantly surprised if it does not happen!
Knowledge

• You can never understand your workplace too well
• You should never stop learning how to do things better
• You should always try to learn from others
• You should always encourage others to learn

Change is inevitable, learn from it!
Experience

- You should always value experience and practice
- If a skill is important to your safety, practice it
- Do not assume “skill of the craft” means “easy to do”
- Use the most experienced workers as mentors
- Use gatherings to share experiences

Broaden your horizons, experience something new!

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Communication

- Maintain regular contact with your coworkers and others
- When your plans change, tell them about it
- Know who to call when unexpected things happen
- Formality of conversation should match gravity of situation
- Be careful not to let idle talk distract from safe operations

“Seek first to understand, then to be understood”
Discipline

- All work requires a degree of discipline, some more than others
- Procedures, training, and supervisors should convey the level rigor needed
- Determine level of discipline needed before doing the job, not during it
- Don’t let a need for discipline become a distraction to safety
- Don’t let conflicting priorities distract from disciplined operations

Discipline is about doing the right thing consistently!
Worker Responsibility

- Every day, we all have a distance to go before we rest
- To arrive safely, recall that you are the central safety circle
  - Esprit de Corps
  - Mindfulness
  - Knowledge
  - Experience
  - Communication
  - Discipline
Pop Quiz

Whose Performance Metrics are these?

(All Values Normalized to Hours Worked per Year)

Production
Injuries
Profit
Lost Time

Year
2004
2005
2006
2007
2008
2009
2010

Production Units
Safety Units

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A Second Clue

(All Values Normalized to Hours Worked per Year)

Production
Injuries
Profit
Lost Time

Refinery Explosion - 15 Dead, 170 Injured
Offshore Oil Rig Failure - near miss
Pipeline Failure - 267k gallon oil leak
Gasoline Pipeline Explosion
Multiple Alaskan Oil Pipeline Failures
North Sea Helicopter Crash - 16 Dead
Offshore Oil Rig Explosion - 11 Dead

Year
2004 2005 2006 2007 2008 2009 2010 2011

Production Units
35.0 30.0 25.0 20.0 15.0 10.0 5.0 0.0

Safety Units
3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0

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20
“BP focused on safety efforts dealing with slips, trips, falls, and vehicle accidents, even as catastrophic process risks were overlooked or not controlled.”

Testimony of the Carolyn W. Merritt, Chairman, Chemical Safety Board, House Committee on Energy and Commerce, Subcommittee on Investigations and Oversight, May 16, 2007

“The immediate causes of the Macondo well blowout can be traced to a series of identifiable mistakes made by BP, Halliburton, and Transocean that reveal such systematic failures in risk management that they place in doubt the safety culture of the entire industry.”

Report to the President; National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling; January 2011

(Note: Production and safety data extracted from British Petroleum 2010 Sustainability Report)
INVESTIGATION REPORT

Refinery Explosion and Fire
(15 Killed, 180 Injured)

Key Issues:
Safety Culture
Regulatory Oversight
Process Safety Metrics
Human Factors

BP
Texas City, Texas
March 23, 2005

Report No. 2005-04-1-TX
March 2007
We Need Better Use of Metrics

“The prizes congratulate corporations for reducing incidents such as slips and falls, which promote complacency ... [but] fail to implement process safety management to eliminate workplace catastrophes that kill.”


It’s time to reduce reliance on DART/TRC as a primary metric for demonstrating the effectiveness of DOE’s safety programs.
Conclusions

- Implementation of Integrated Safety Management at the Institutional, Facility, and Activity Level are critical to the safe performance of mission; use them to your safety advantage
- YOU are the center of your safety circle, YOU call the balls and strikes
- YOUR involvement determines the quality of safety in your workplace
- DOE and its contractors have made good progress in Activity-Level Work Planning, but more is needed; the Board encourages the development of improved standards and guidance
- The Board is concerned that an overreliance on DART/TRC can lead to complacency and distract from preventing low-probability, high-consequence accidents