

# Getting Safety Right – First Prevent Serious & Fatal Injuries (SIF's)

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November 7, 2019  
11:00 AM ET





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# Safety Briefing

## What & Where



**Exits**



**Fire**



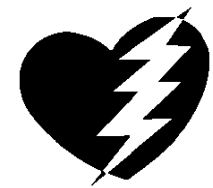
**Weather**



**Seismic**



**Aid Kits**

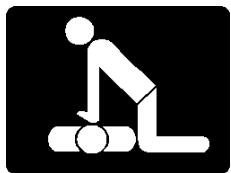


**AED**

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## Who & How



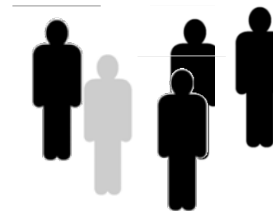
**CPR**



**First  
Aid**



**Phone  
Call**



**Head  
count**



**Path of  
Travel**

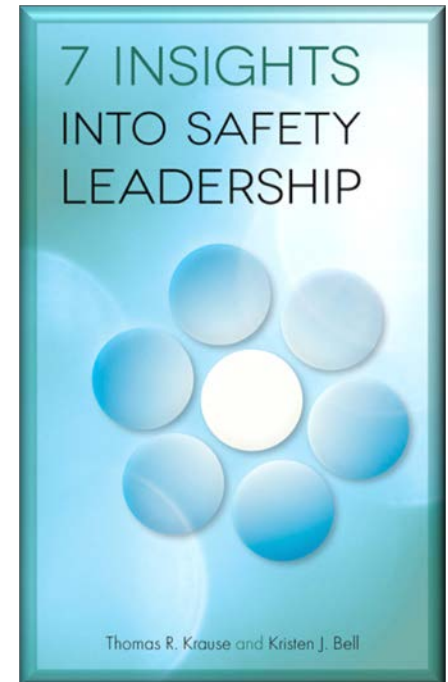
# Objectives

Participants will:

- Understand basic SIF principles.
- Be able to work SIF concepts into conversations.
- Align on what we mean by SIF and which situations carry SIF potential.
- Understand basic SIF Precursor concepts

# 7 Insights into Safety Leadership

1. Safety as a core value and strategy.
2. **Start with attention to serious injuries and fatalities.**
3. Leadership sets safety improvement in motion.
4. Culture sustains performance - for better or for worse.
5. Understanding core safety concepts.
6. Understanding the role of behavior in safety.
7. Cognitive bias affects safety decisions.



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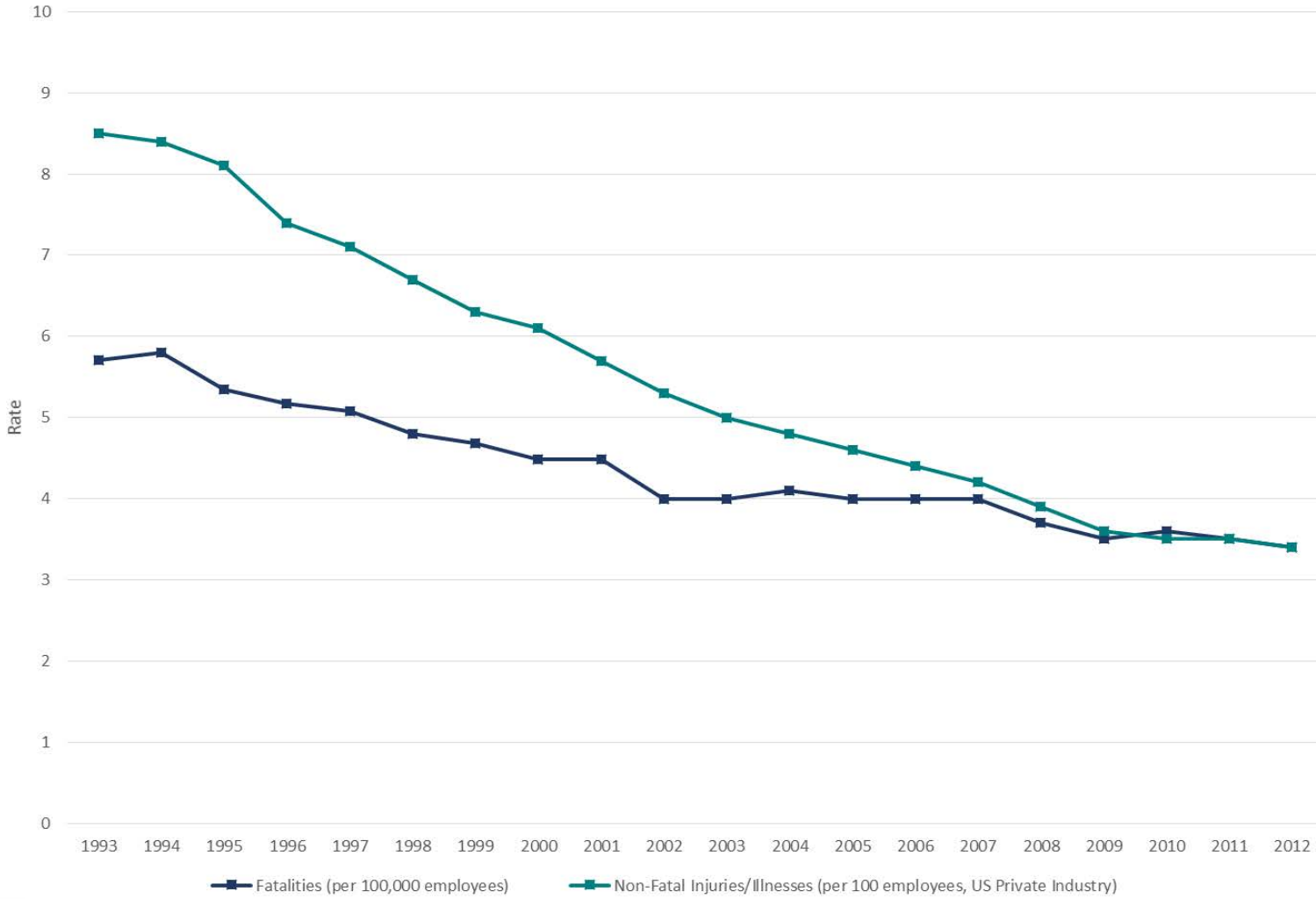
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# SIF Foundational Concepts





# OSHA rates were declining, but fatal injuries were not.



# The 2010 Study: Serious Injury and Fatalities

## Study Participants:

- Dr. Tom Krause and Colleagues
- ORCHSE
- ExxonMobil
- Archer Daniels Midland Company
- Shell
- BHP Billiton Petroleum
- Potash
- A.P. Moeller – Maersk Group
- Cargill



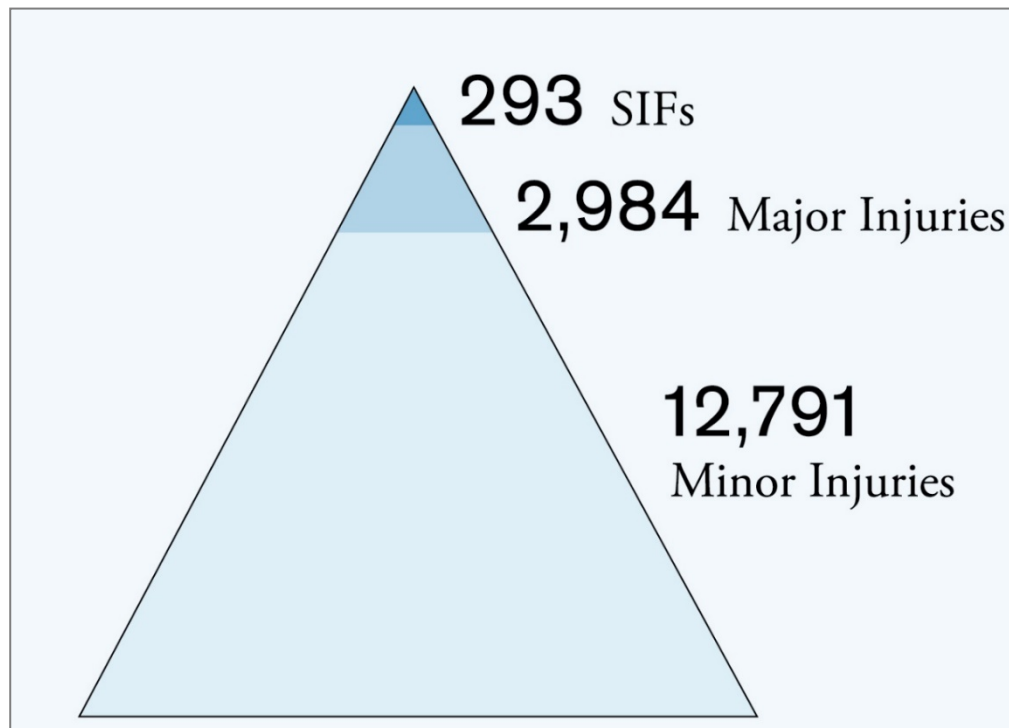
# The 2010 Study: Serious Injury and Fatalities

Question 1:

Is the safety triangle accurate descriptively?

# The 2010 Study: Serious Injury and Fatalities

The traditional safety triangle is accurate descriptively.



This triangle represents data from six organizations between 2008-2009

# Implications of Question 1

- The safety triangle provides an accurate description of the quantitative nature of accidents and incidents.
- The safety triangle provides insight that informs prevention strategies.
- It means that a single incident has significance.

# The 2010 Study: Serious Injury and Fatalities

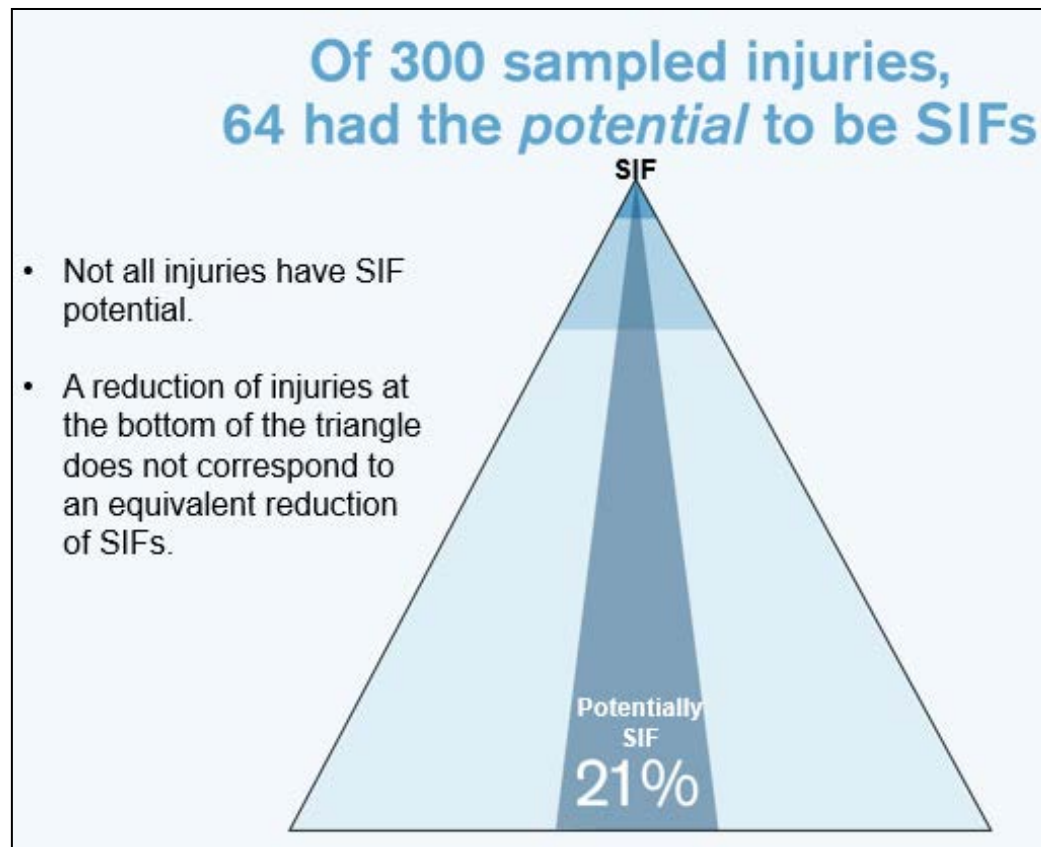
## Question 2:

Is the safety triangle accurate predictively?

- a) Do less serious injuries have equal potential to be SIFs?
- b) Do SIFs have different characteristics and causes than less serious injuries?

# The 2010 Study: Serious Injury and Fatalities

The traditional safety triangle is **not** accurate predictively.



# Similar injuries have very different SIF potential

- A. Carpenter smashes his thumb with a hammer, and sustains a deep cut requiring 8 stitches.
- B. Carpenter's thumb contacts a hand grinder, and he sustains a deep cut requiring 8 stitches.

## Questions:

- Which of these injuries had greater potential to affect the carpenter for the rest of his life?
- What was the difference in the two situations?

# Implications of Question 2

1. Reducing recordable injuries does not assure a reduction in SIFs.
2. SIFs have identifiable indicators and root causes.
3. A **reliable** SIF-P rate can tell you if your efforts are improving or not.
4. SIF reduction is likely to follow a systematic concerted effort by leaders.



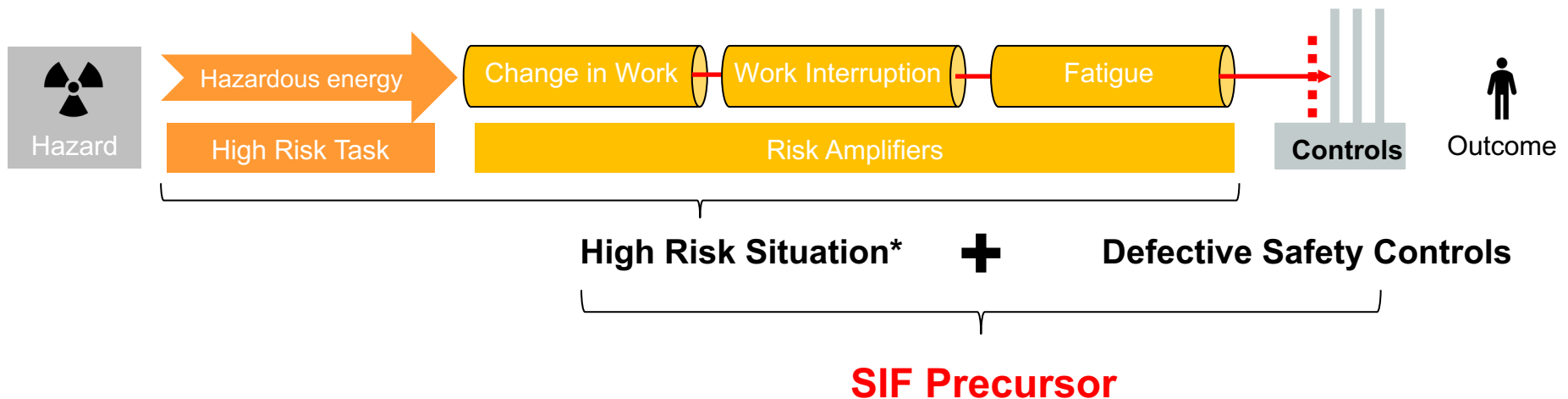
# Quiz – SIF Potential

According to the 2010 study definition, which of the following situations had SIF potential?

1. A Machine Tender falls from a ladder, crushes leg and does not fully recover.
2. A Lab Tester is walking down an empty corridor, slips on water and falls.
3. A Lab Tester is hurrying down a very congested corridor, slips on water and falls. A heavy cart with sharp corners is 3' away.
4. A Woodyard operator falls off the bottom rung of the front end loader, suffers a cut on his leg requiring 2 stitches.
5. A Sales employee is involved in a car accident at 5 mph, no harm resulted.
6. A Sales employee is involved in a car accident at 50 mph, no harm resulted.
7. A E/I technician is helping to test alignment of a conveyor belt. The guards are removed and it is not locked out because they need to rotate it. Nothing bad happens.
8. Employee pinched left index finger while attempting to remove a piece of paper between 3" core and drum roll while in job speed.

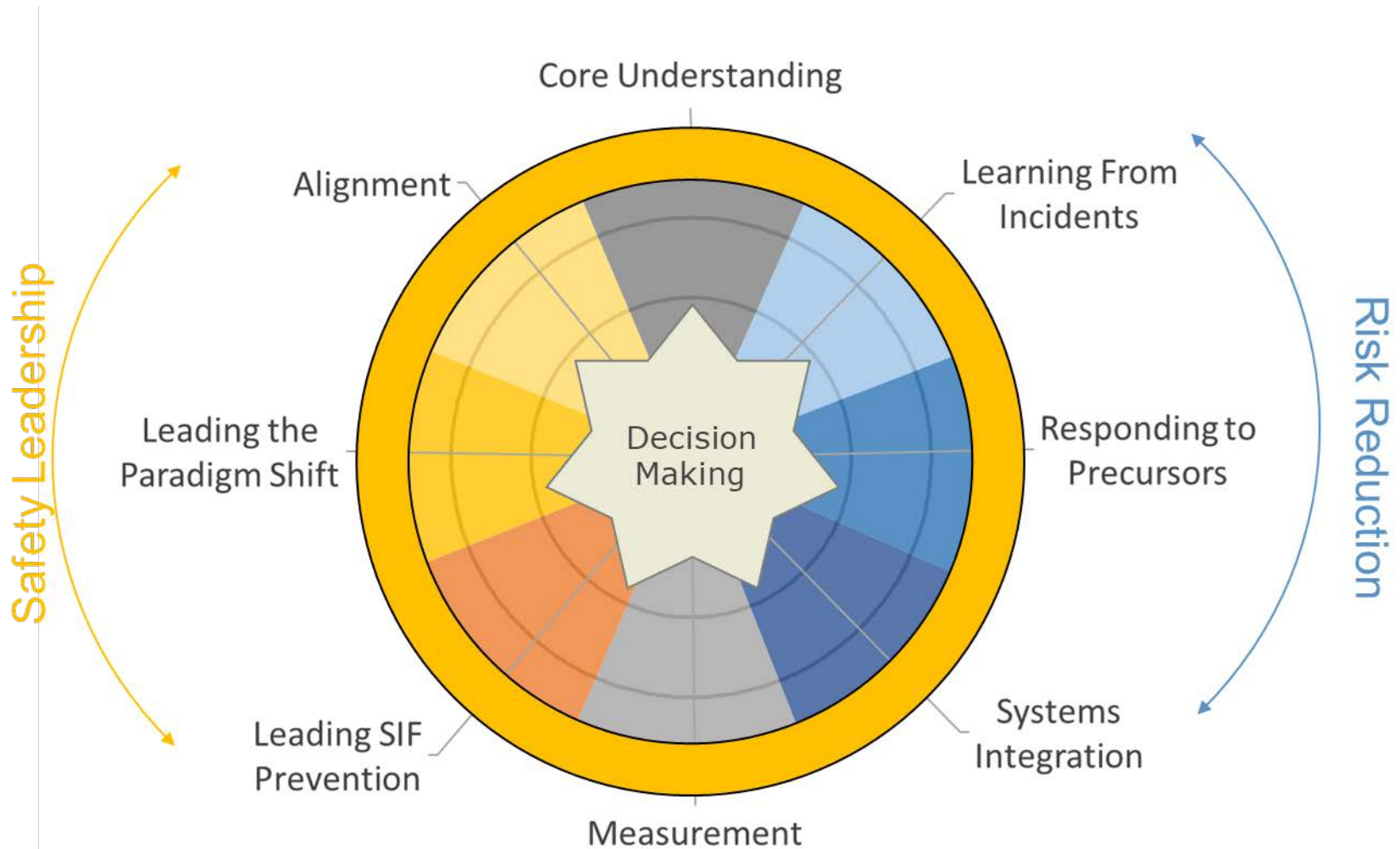
# Definition – SIF Precursor

*A SIF precursor is a high-risk situation in which safety controls are compromised, missing, or ineffective.*



\*A high-risk task is sufficient to create a high-risk situation. **Amplifiers** simply increase the likelihood of an incident or the severity when it happens.

# Krause Bell Group - SIF Maturity Model



# Krause Bell Group - SIF Maturity Model

## Foundational Elements:

**Core Understanding** – 2010 SIF Study; establish definitions & decision tree. Wide understanding of SIF concepts across the enterprise.

**Measurement** – Establish SIF-Actual and SIF-Potential rates; establish leading metrics. Ensure hazard ID, near miss and behavioral safety programs are measuring SIF exposure.

**Decision Making** – Recognizes the criticality of decision making for all SIF Maturity Model elements. Clear that decision making explicitly takes SIF prevention into account.

# Krause Bell Group - SIF Maturity Model

## Safety Leadership Elements:

**Alignment** – Calibrate foundational elements at all levels and from business unit to business unit.

**Leading the Paradigm Shift** – Integrating SIF concepts into leadership practices and communication mechanisms.

**Leading SIF Prevention** – Helping all levels of leadership identify how their role changes; integrate SIF concepts into safety governance structures.

# Krause Bell Group - SIF Maturity Model (con't)

## Risk Reduction Elements:

**Learning from Incidents** – Improve learning process commensurate with SIF potential; ensure there is an atmosphere that supports reporting and speaking the truth.

**Responding to Precursors** – Proactive precursor identification, measurement and mitigation mechanisms are in place.

**Systems Integration** – Integrating SIF concepts and approaches into existing safety mechanisms.

# Questions? Discussion?





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## End of Presentation

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