

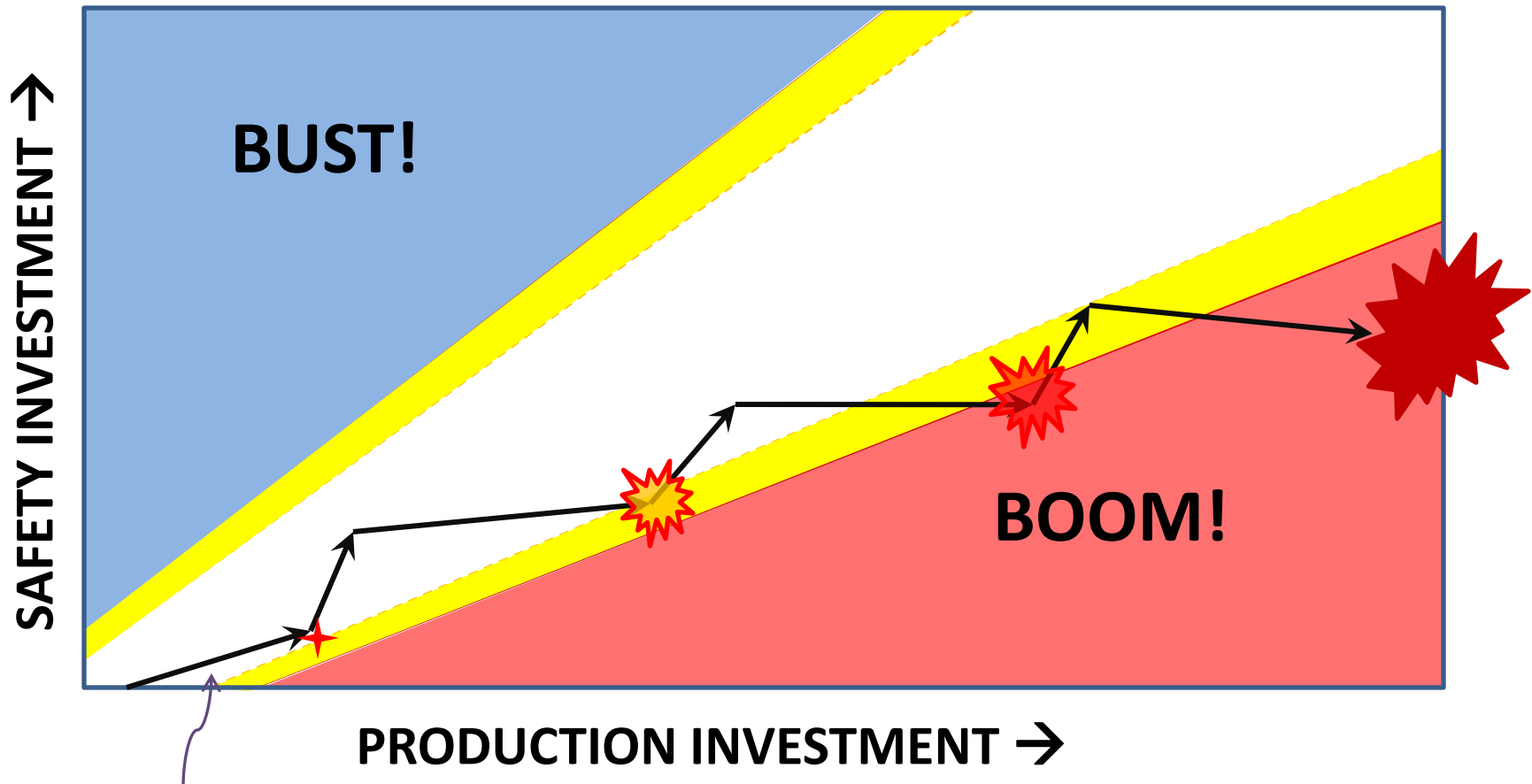
DFNSB Staff Perspective on Safety Culture in DOE

Doug Minnema, PhD, CHP
DNFSB Staff

The views expressed are solely those of the author and no official support or endorsement of this summary by the Defense Nuclear Facilities Safety Board is intended or should be inferred.

A Modified “Reason Model”

(modified from Reason, 1997 and Starbuck, 1988)



The slope and direction of this line is driven by the organization’s desire to “economically optimize” the relative cost of safety in the activity. As safety deficit increases, slope may go negative, leading to more rapid degradation.

Example: Davis-Besse NPP

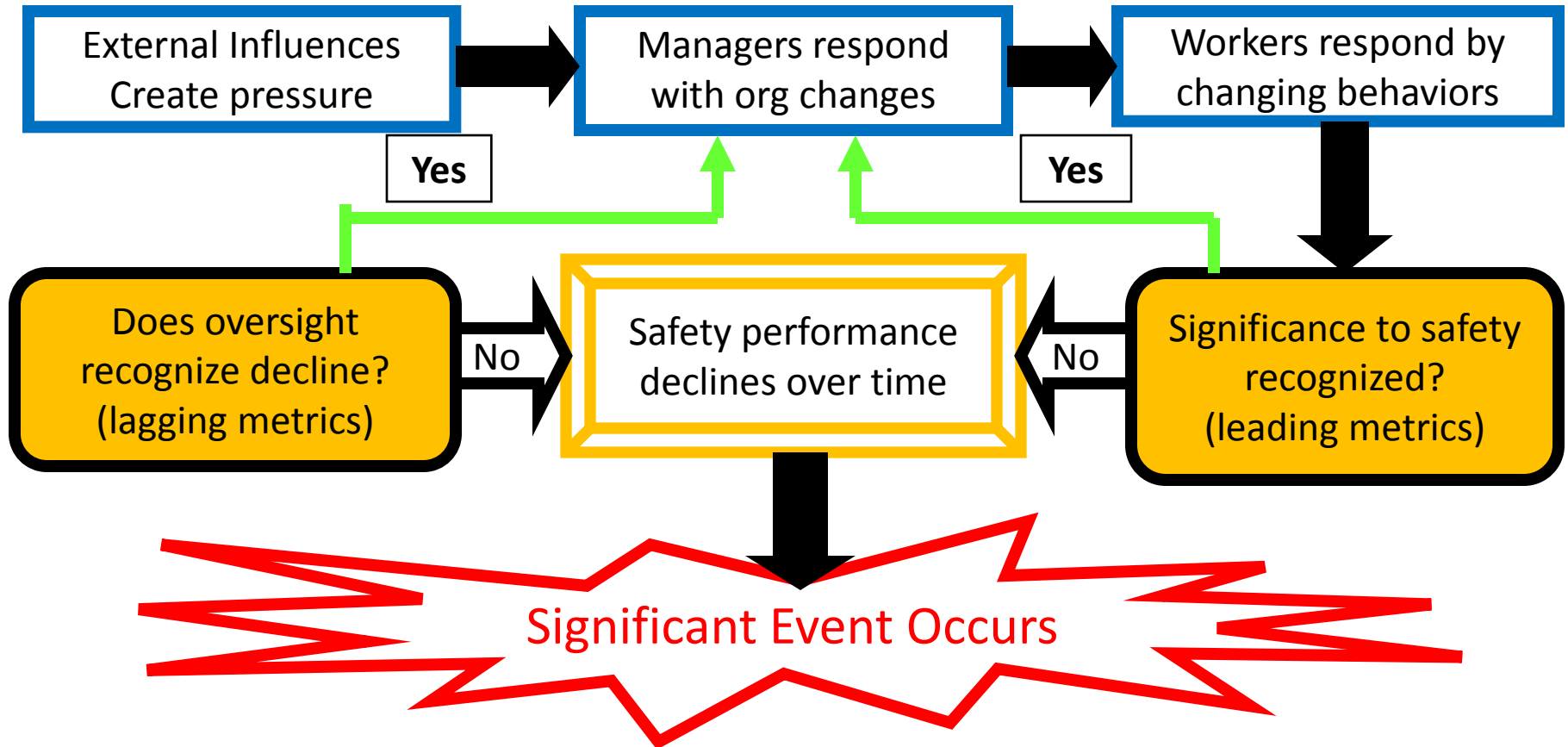
Over the several years before corrosion was discovered:

1. External market conditions drove managers to defer maintenance; undertake merger; delay upgrades
2. Workforce responded by reducing rigor; chasing symptoms not causes; raising informal issues threshold
3. Minimalist compliance approach evolved in organization, failed to recognize significance of emerging issues
4. Oversight processes were not effective, if conducted, in detecting changing organizational behaviors
5. Safety performance suffered general decline until corrosion was discovered & regulator intervened

Improving Safety Culture;
D Minnema, ISM Champions
Workshop, BNL, 11/2007.

Event Progression Model

- Organizational accidents often follow the same progression:



Feedback and Improvement is vital for safe and productive operations.

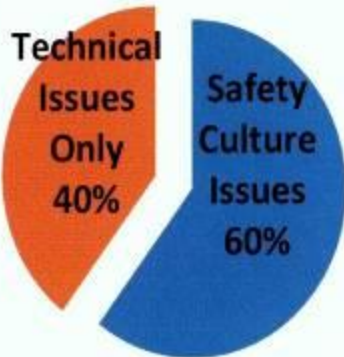
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DOE's Cultural Challenges

- External Influences are strong, ever-present, and disruptive:
 - Externally-driven budget and mission constraints
 - Frequent changes in senior leadership
 - Frequent changes in missions, budgets, collateral duties
- Feedback & Improvement processes are not mature or stable:
 - Frequent changes in policies and requirements
 - Frequent shifts in safety responsibilities (Federal <-> Contractor)
 - Perceptions of safety risks vary with “distance” from activity
 - Agency unable to balance risks between dispersed activities
- Extremely diverse and dispersed workforces:
 - Wide range of motivations, no common point of influence
 - Strongly loyal to the “institutions” they work at
 - Weakly loyal to senior leaders, often respecting position over person
 - Typically not loyal to corporate entities and managers
 - Workforces seek stability, resist change, expect things will change again

Topics of DNFSB Correspondence With DOE

All DNFSB Letters



34% of all Recommendations include Safety Culture elements.
Since 2002, 50% of Recommendations include Safety Culture elements.

Safety Culture-related letters more frequently contained reporting requirements than others.

Dr. Winokur's Top 10 List

“you have a safety culture when...”

1. Leaders “talk the talk”
2. Safety is the overriding priority
3. Leaders “walk the walk”
4. Workers are empowered to ensure their own safety
5. Everybody takes personal responsibility for safety
6. Trust permeates the organization
7. Lessons are learned; the brutal facts are faced
8. Checks & balances are in place and respected
9. Near-misses, leading indicators, and safety-related research needs are proactively addressed
10. Training is continuous and of high quality

*Safety Culture (and ISM); P. S. Winokur,
ISM Champions Workshop, BNL, 11/2007.*

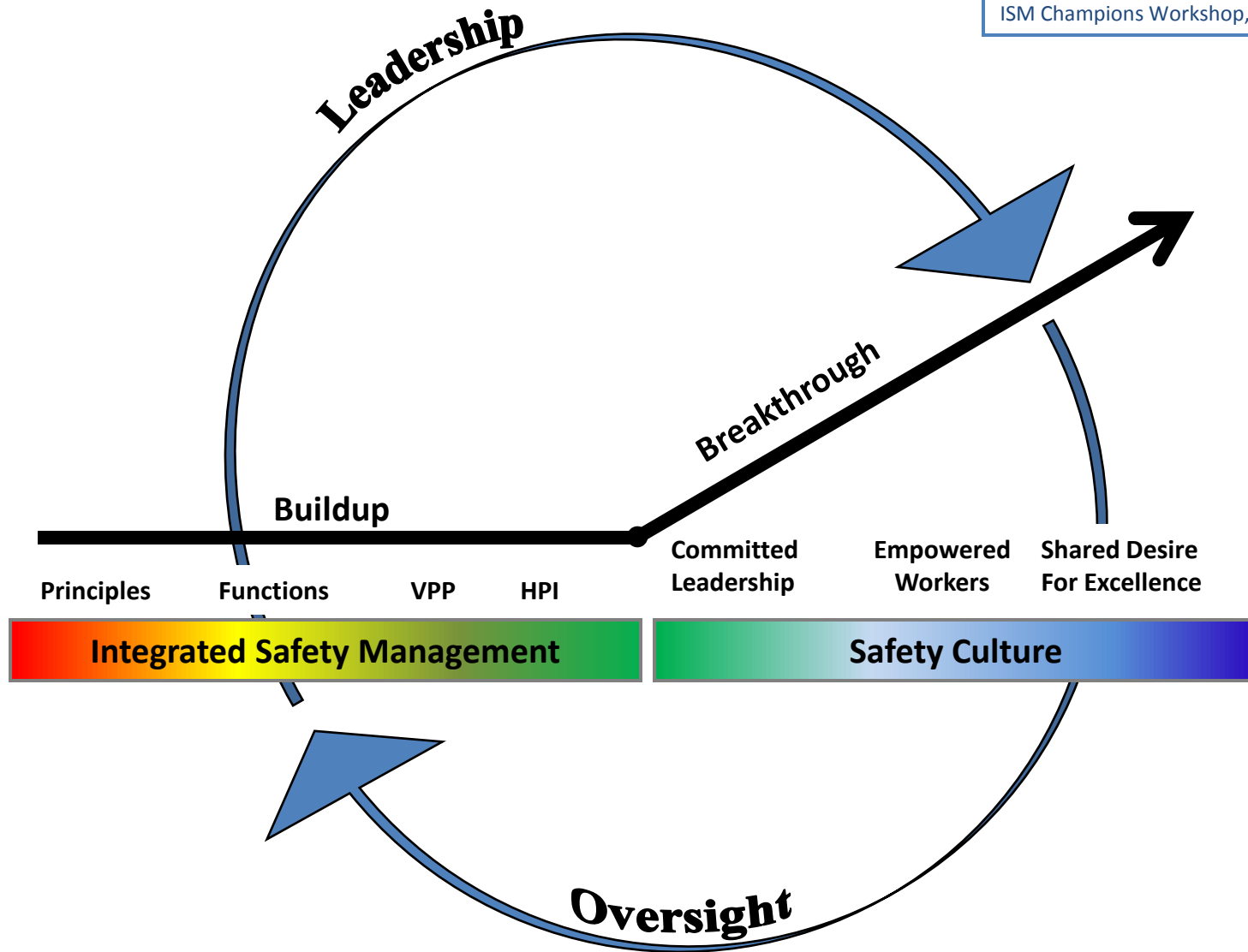


Figure adopted from: Jim Collins, Good to Great; HarperCollins Publishers, NY; 2001.