

Risk Tolerance and Human Performance



Norman Ritchie, vPSI Group, LLC Houston, Texas

Norman Ritchie has worked in oil and gas for over 30 years. Educated as a Mechanical Engineer at the University of Glasgow in Scotland, he has gained broad expertise through engineering and management positions in exploration, production and capital projects. Ritchie's experience covers the full hydrocarbon development life cycle from conceptual design to decommissioning.

Since 1997, Ritchie has consulted in project management and enterprise risk management. As a Director of vPSI group, LLC, which he co-founded in 2003, Ritchie provides consulting and training in performance measurement and improvement, principally in the areas of risk, loss prevention, safety, problem solving and human factors.

Ritchie holds a broad US patent for online JSA Systems and currently serves as Chair of the Houston Energy Corridor Section of the ASSP's Gulf Coast Chapter.

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Rick Theriau, vPSI Canada Ltd Calgary, Alberta

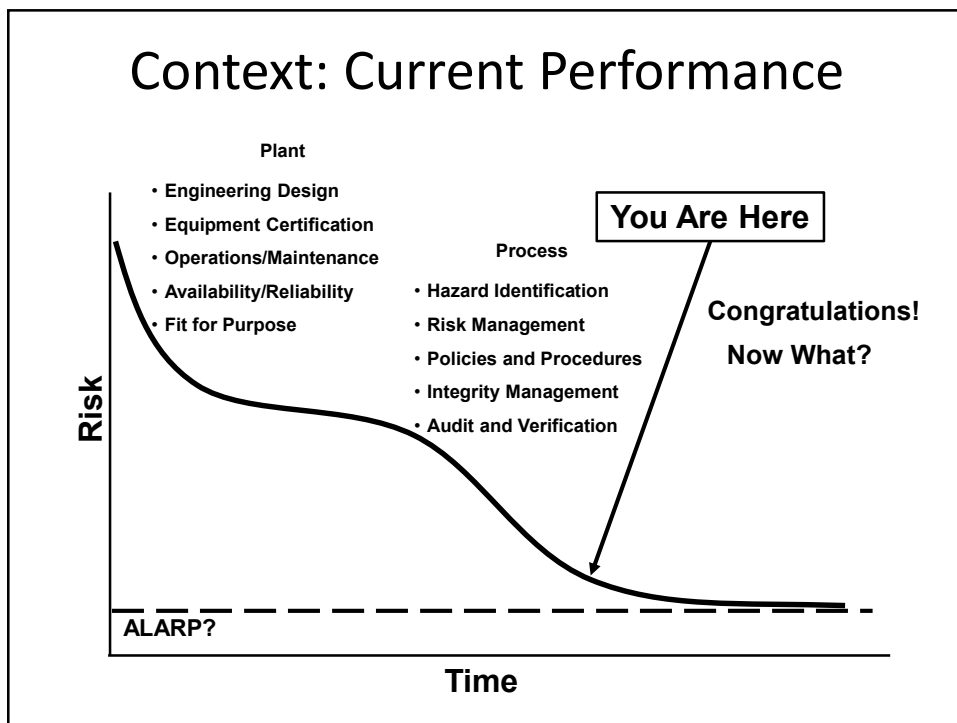
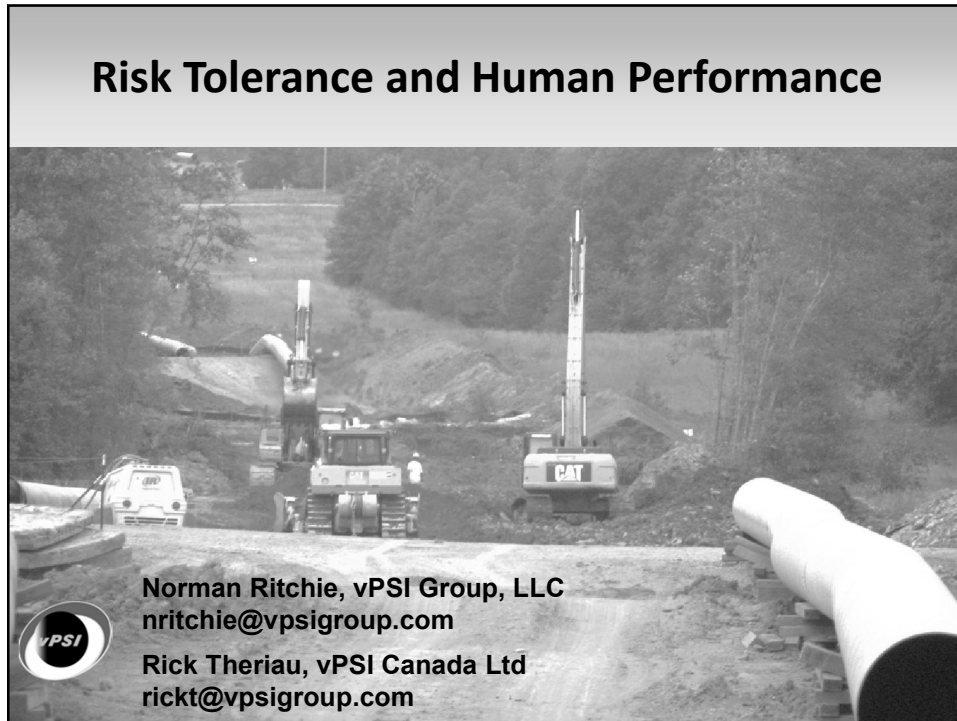
Rick has worked in oil and gas from the age of 15 and recently retired from Halliburton Group Canada after 32 years of leadership and engagement with each of the Canadian product service lines. He specialized within service quality improvement and efficiency while leading the continuous improvement efforts on health, safety and environmental initiatives.

He believes in giving back to the energy industry and has been assisting Energy Safety Canada, Enform and PITS since 2002 as a thought leader on many successful industry initiatives. These have included leading the teams that compiled IRP #7, IRP #8, Chemical classification, Contractor Management and currently is involved with the Fit for Duty initiative.

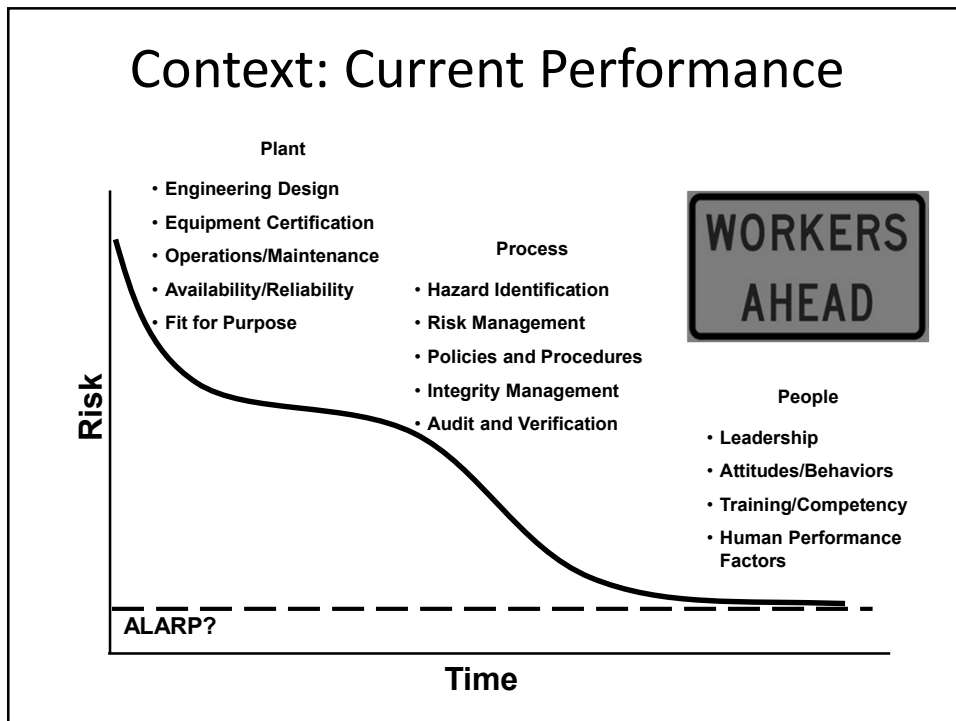
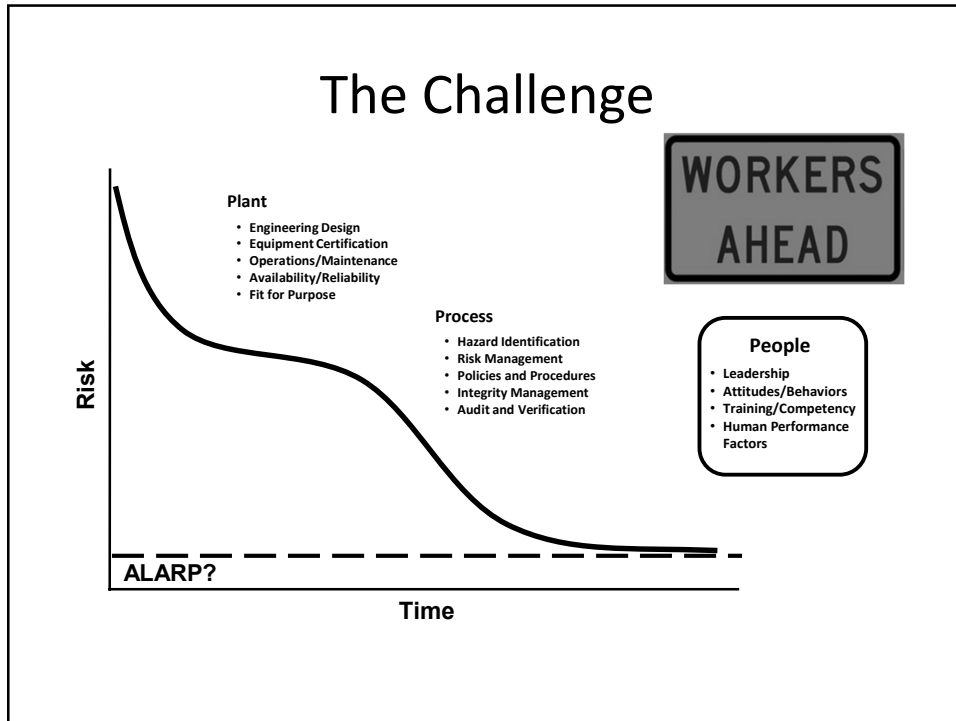
His professional education has included becoming a Petroleum Engineering Technologist, a Registered Environmental Manager and a Canadian Registered Safety Professional.

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Do you believe that all unplanned events can be prevented?

Choices	Responses	Percentage of Total Responses
Yes	21	36%
Yes but not all are worth the investment	15	25%
No but our culture is not ready to accept it	8	14%
No	15	25%

The Challenge

- **Humans are complicated and unavoidable**
- **Certain types of Human Failure are not preventable**
- **Influencing Human Behavior is not easy**
- **Limited manpower and supervisory resources**
- **Traditional supervisory and management behaviors are culturally embedded**
- **Preventive and Corrective Actions differ according to the Human Failure type involved**



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Human Failure Types

Slip

Lapse

Mistake

Violation

Slips & Lapses

ONE PROBLEM

ONE SCOT

ONE BEER

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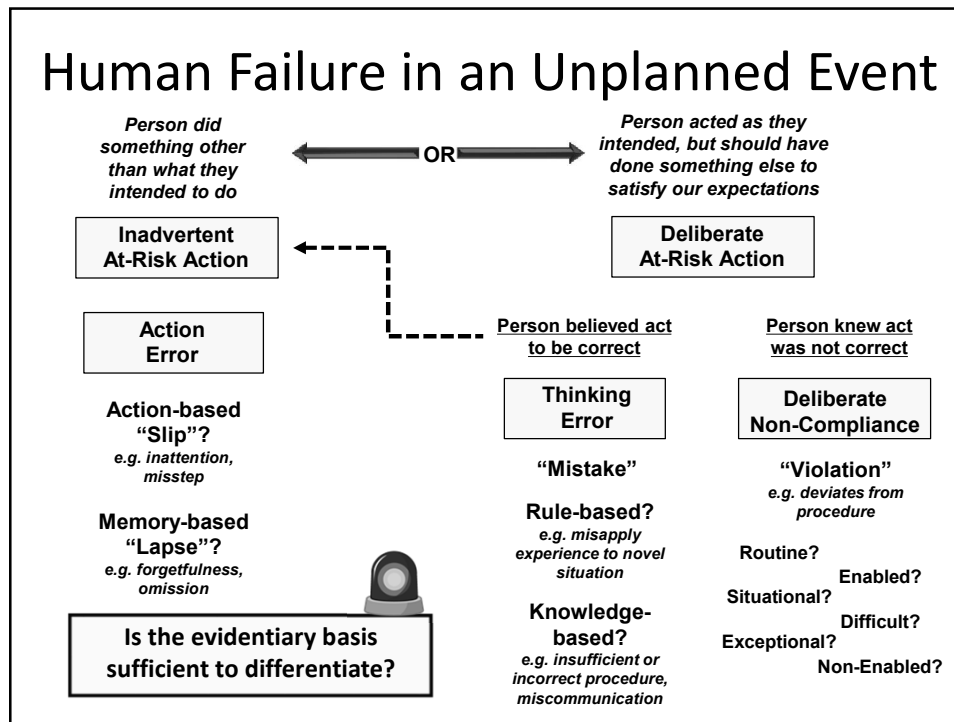
Mistakes & Violations

- **Need to understand the context as there are different drivers of both**
- **For example, was the violation willful and malicious? Or, was it 'the way we do things around here'?**

In your current investigation methods have you reduced the risk of a reoccurrence of the event?

Choices	Responses	Percentage of Total Responses
Yes	15	25%
Yes and can measure the progress	11	18%
No	17	28%
Unsure	18	30%

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Pragmatic Resource Investment

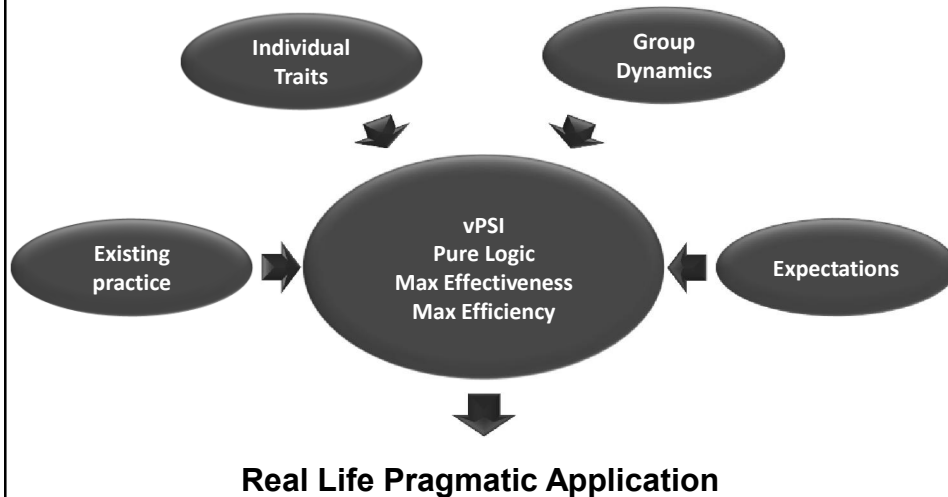
- **Should all Unplanned Events be fully investigated?**
- **Which Unplanned Events are worth investing resources in to prevent reoccurrence?**
- **Sustainable Organizational Learning requires systems / processes BUT there's a fine line between added value processes and bureaucracy.**
- **Not all learning opportunities are worth the resource spend.**
- **How do you decide which are?**

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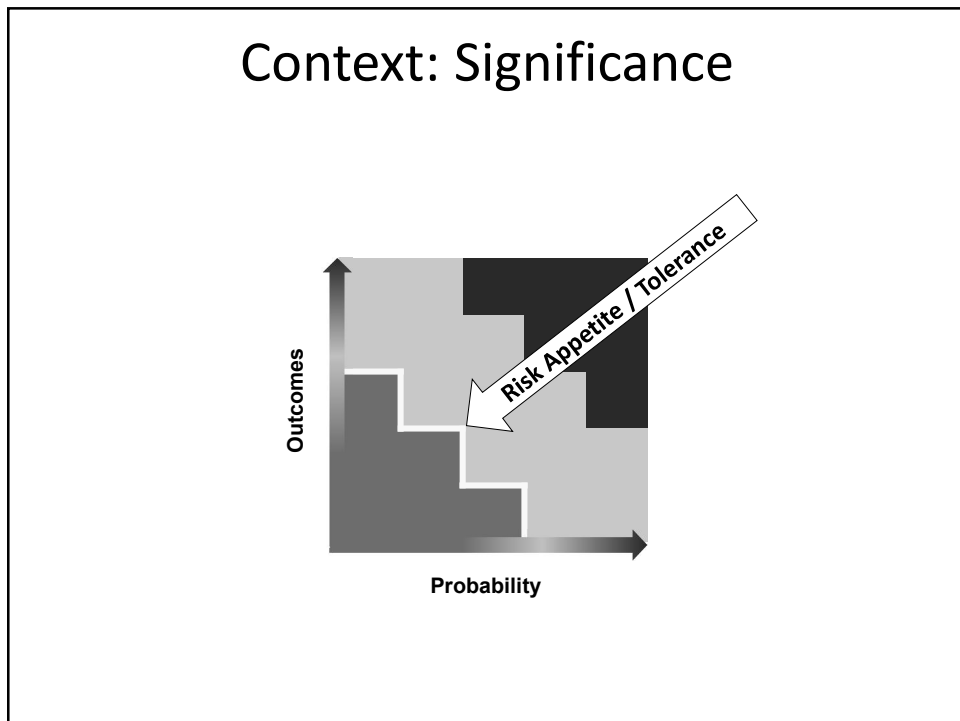
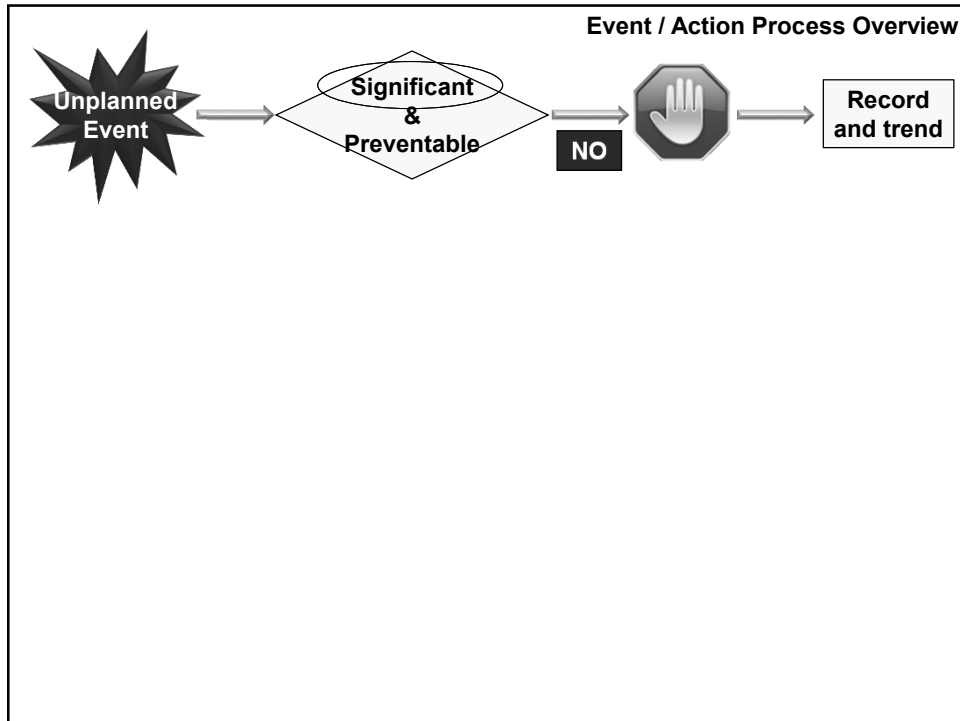
How do you decide when an investigation is needed?

Choices	Responses	Percentage of Total Responses
Incident Severity	35	56%
Risk Matrix	19	31%
Unintended Consequences	6	10%
Whether a customer/manager/VP says something	2	3%

Context: Logic vs Reality

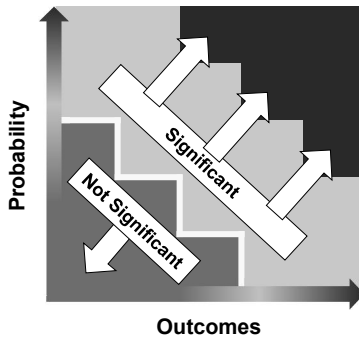


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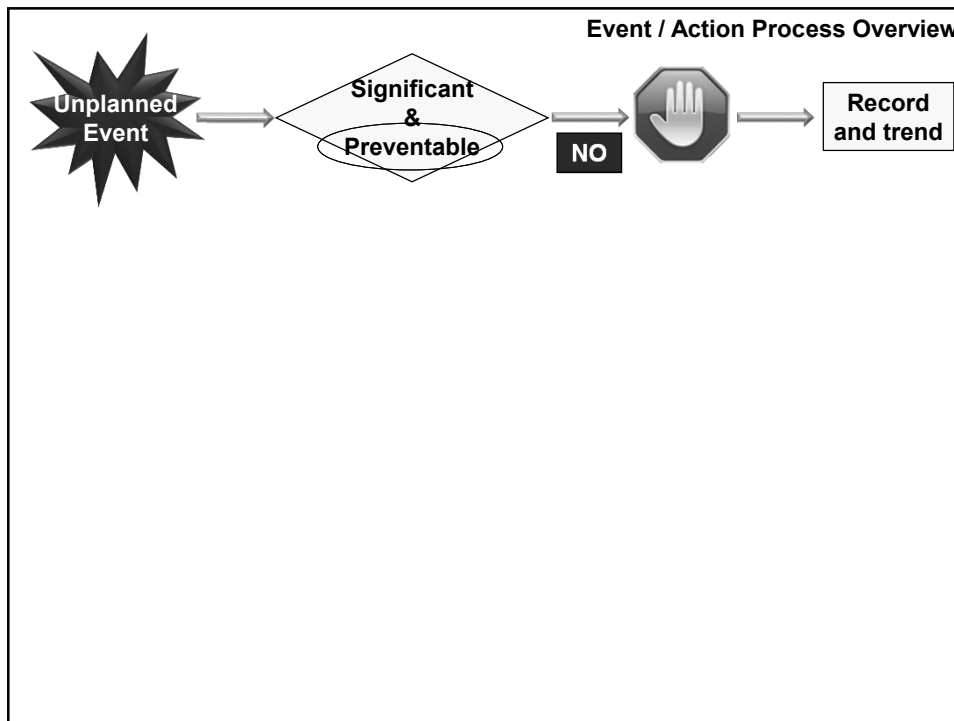
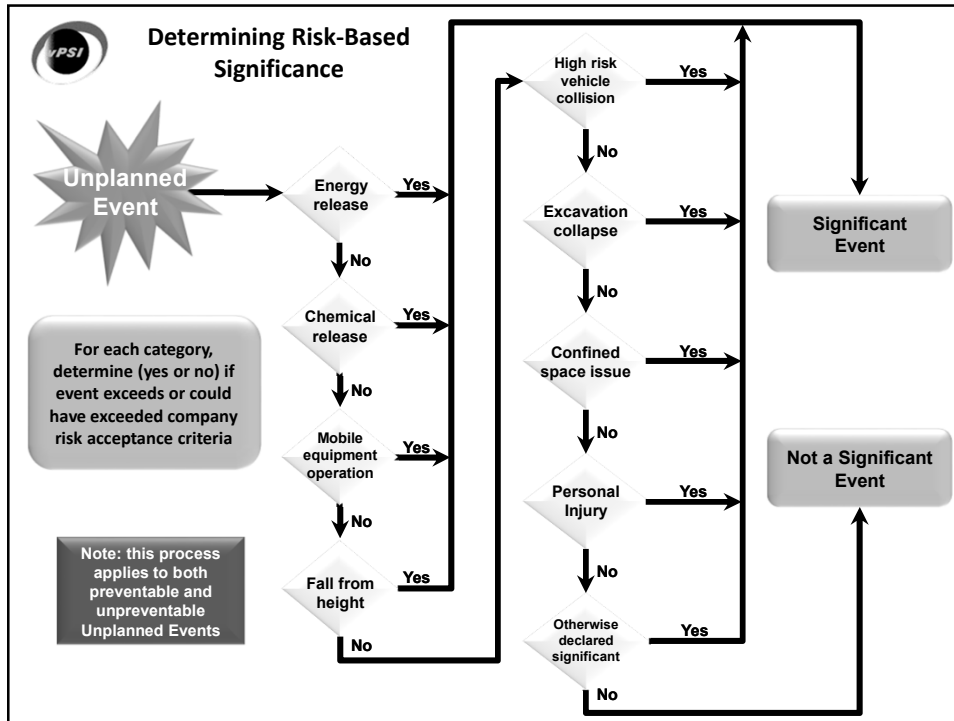
Context: Significance



What are the stages in your current process for investigating events?
(Multiple Choice)

Choices	Responses	Percentage of Total Responses
Immediate response and communications	46	87%
Gather information	51	96%
Data quality check	17	32%
Root cause analysis	48	91%
Issue report	40	75%
Validate actions	33	62%

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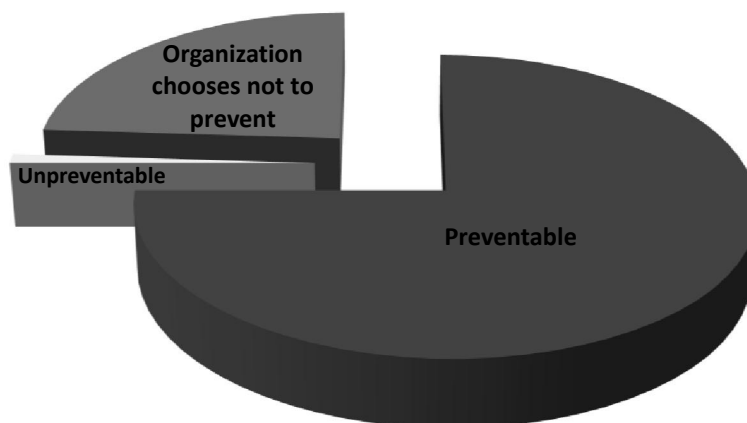


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Types of Unpreventable Events

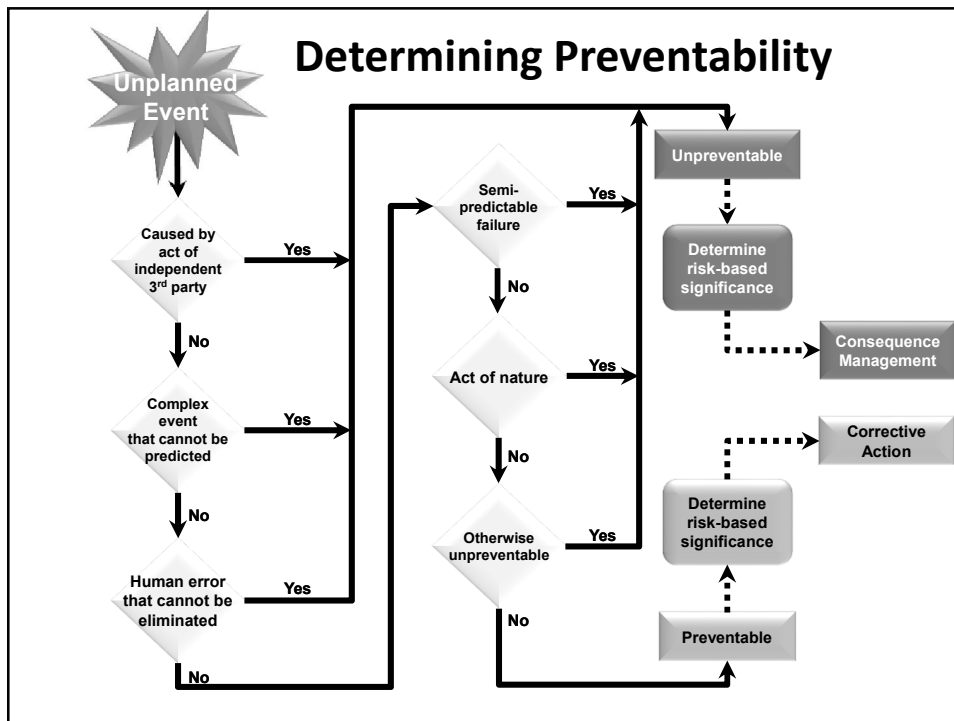
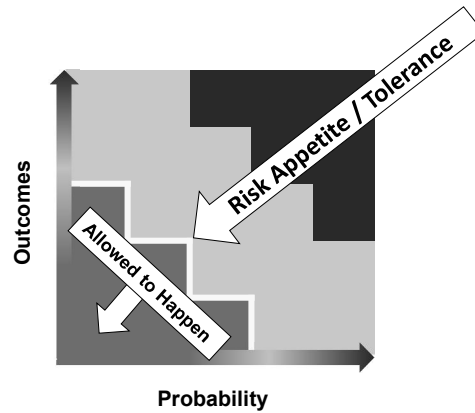
- **Acts of Nature**
- **Acts of Third Parties**
- **Human Error (Some)**
- **Extremely Complex Events**
- **Semi-Predictable Failures**
- **Undetected Latent Errors**

Context: Preventability

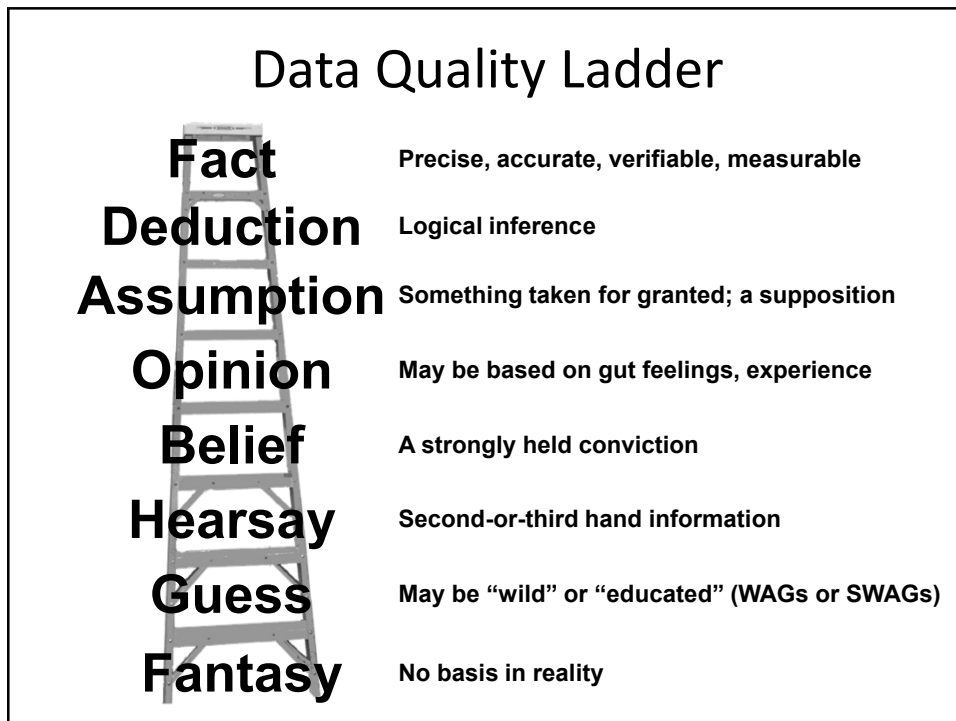
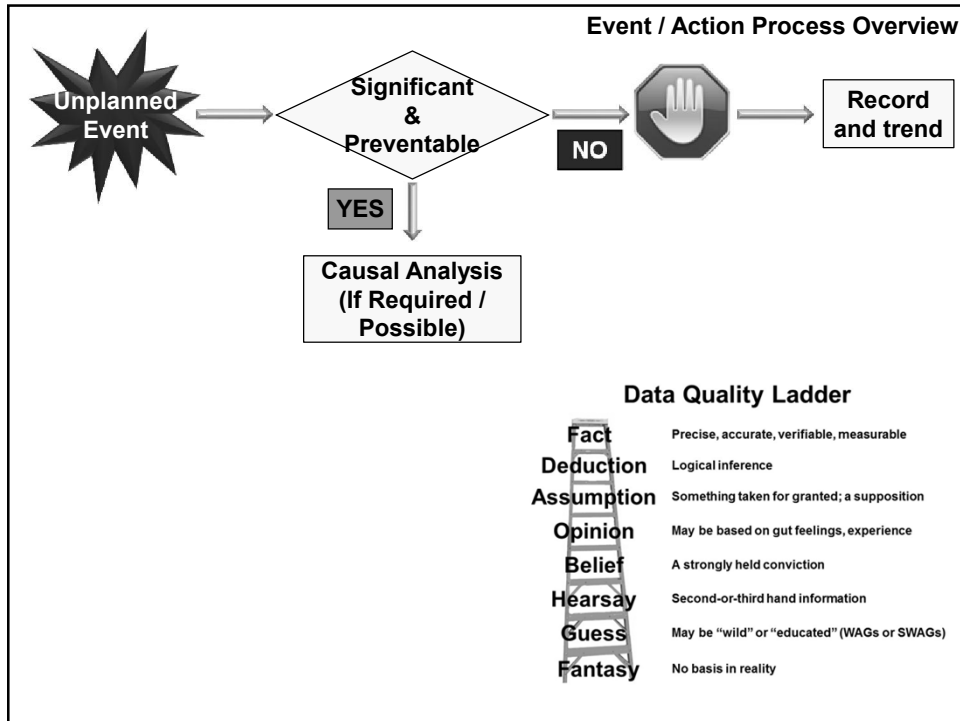


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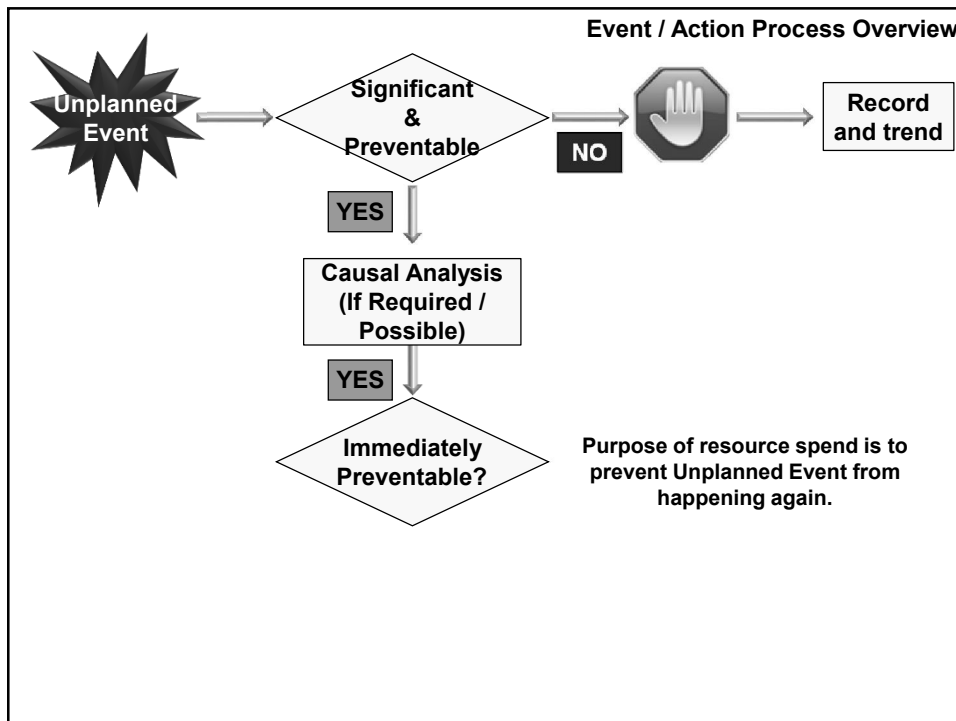
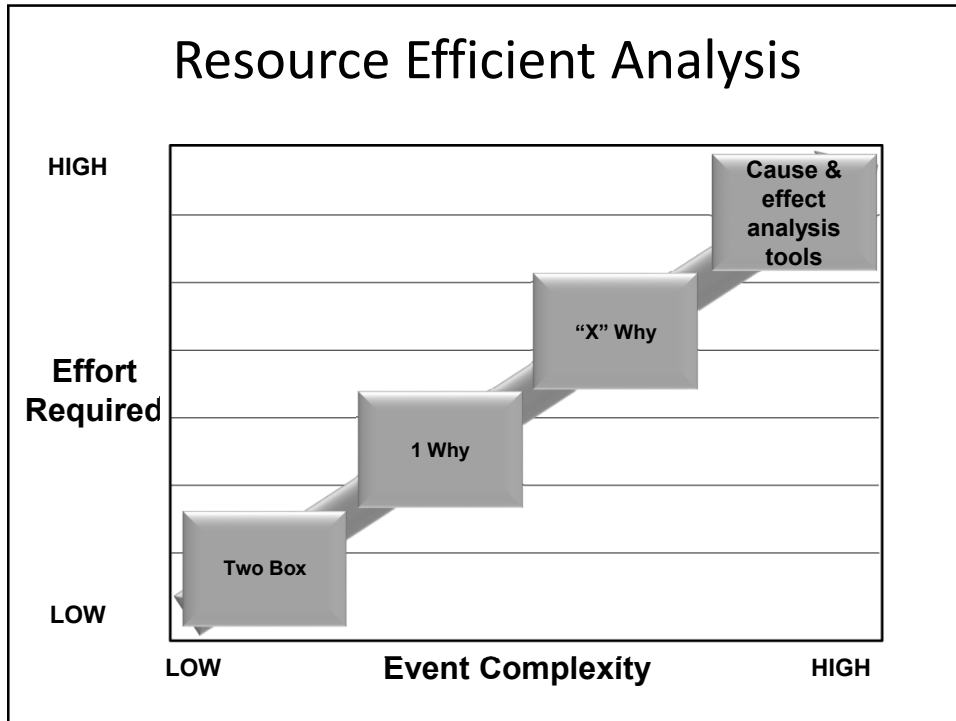
Context: Preventability



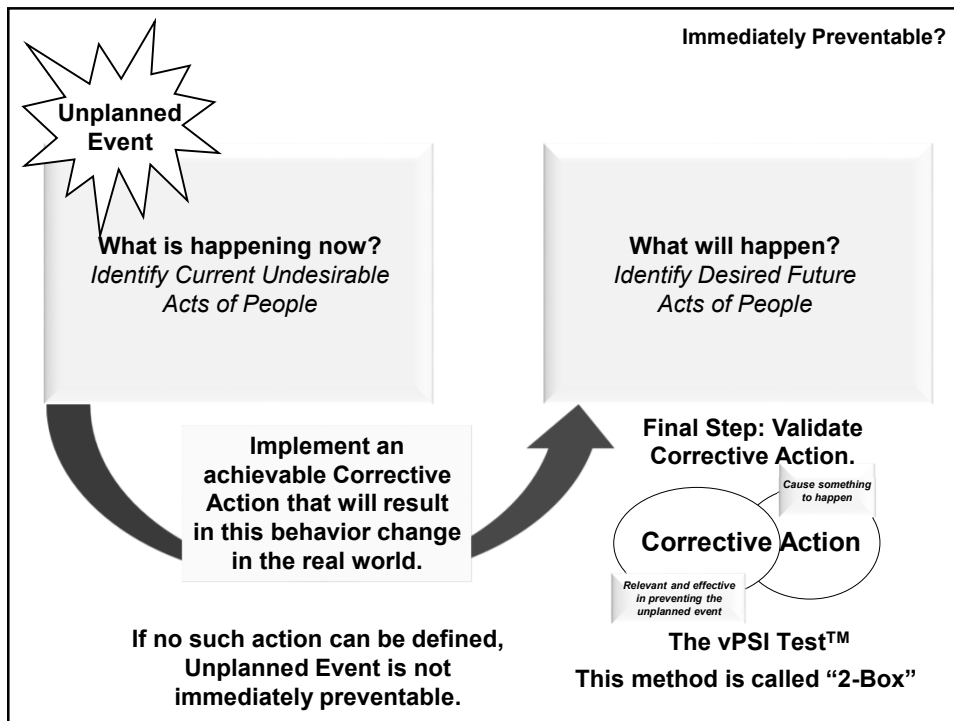
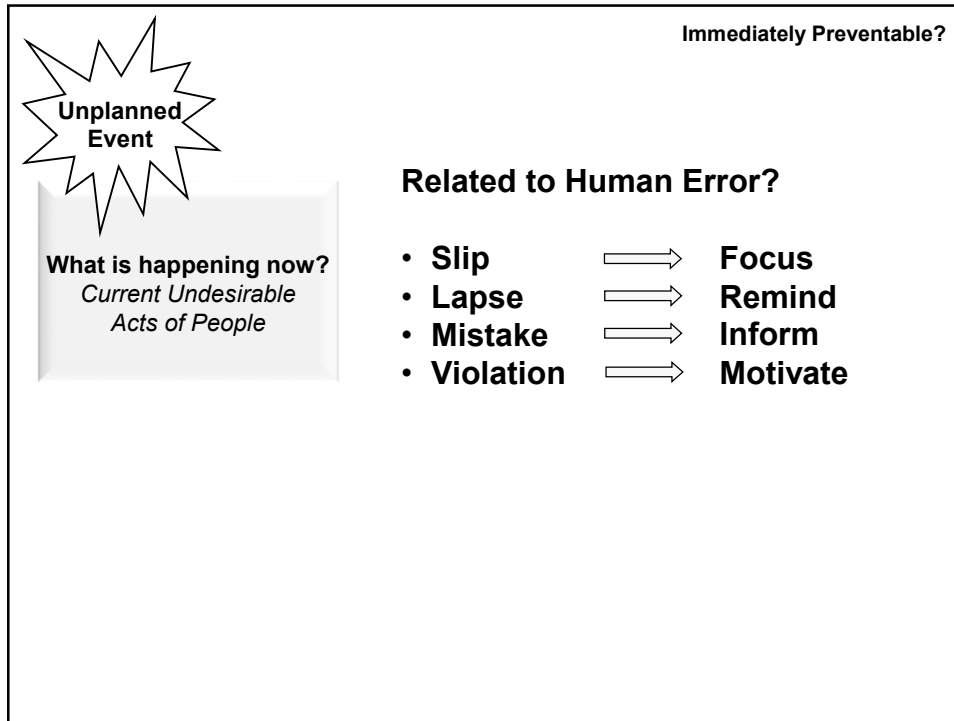
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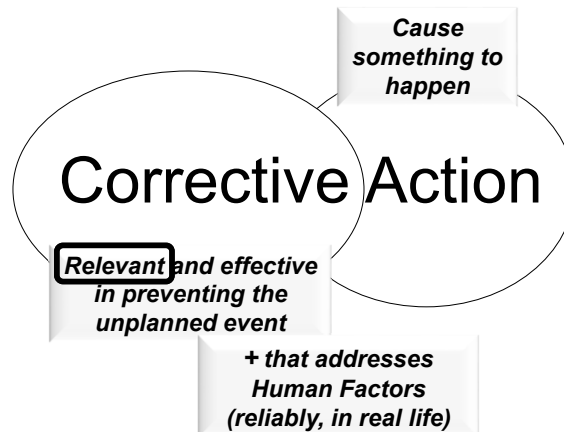


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Validation of Corrective Actions



It **MUST** be possible to identify a cause and effect relationship between an activity presented as a Corrective Action and the desired result.

Actions You Can Take Right Now

- **Gap / Opportunity Analysis of current processes from Human Performance perspective**
- **Implement significance and preventability filters**
- **Facilitate HAZOP-like Human Performance risk reviews**
- **Develop and train onsite Data / Evidence Gathering Protocol to allow incorporation of Human Performance in incident investigation process**
- **Train personnel in resource efficient and effective analysis of Human Performance issues**
- **Train personnel in development of efficient and effective corrective actions against Human Performance issues**
- **Measure the effectiveness of the organization's response to Unplanned Events, including those involving Human Performance**

* Note "Train" in this context means impart and maintain competence

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Future Webinar

Please join us for the sequel:

- Investigating unplanned events in a fraction of the time currently spent (including near misses)



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Questions?

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