

Risk Management is the Future of Safety Excellence; How to Demonstrate **Tolerable** and **ALARP**

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Agenda



- Introduction – Good & Bad News!
- Definitions & Discussion I
 - Risk Management
 - Tolerable
 - ALARP
 - Safety Excellence
- Benchmarking through Q&A I
- Definitions & Discussion II
 - Treat
 - Transfer
 - Terminate
- Benchmarking through Q&A II
- Summary
 - Safety Case
 - Next Steps
- Questions

DEFINITIONS & DISCUSSION I





Risk Management*

- “*The **identification, analysis, assessment, control, and avoidance, minimization, or elimination of unacceptable risks. An organization may use risk assumption, risk avoidance, risk retention, risk transfer, or any other strategy (or combination of strategies) in proper management of future events.***”

<http://www.businessdictionary.com/definition/risk-management.html>

- “*Risk is inherent in everything we do...include(s) insurance, business continuity, **health and safety**, corporate governance, engineering, planning and financial services.*”

<https://www.theirm.org/the-risk-profession/risk-management.aspx>



Tolerable*

- *“Able to be endured”*

<https://en.oxforddictionaries.com/definition/tolerable>

- A risk is defined as tolerable when the overall risk classification is deemed **acceptable** after confirming that the benefit gained from continuing the activity merits continuing exposure to the risk (**Classic CBA**)

AS LOW AS REASONABLY PRACTICABLE (ALARP)

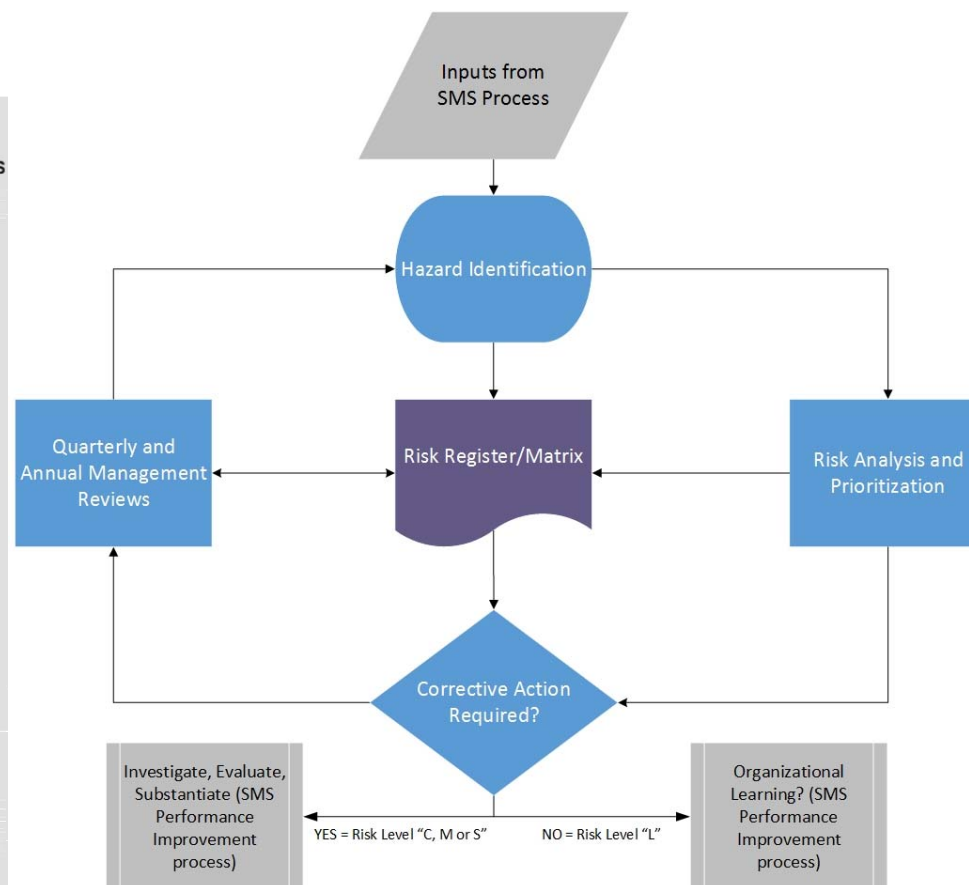
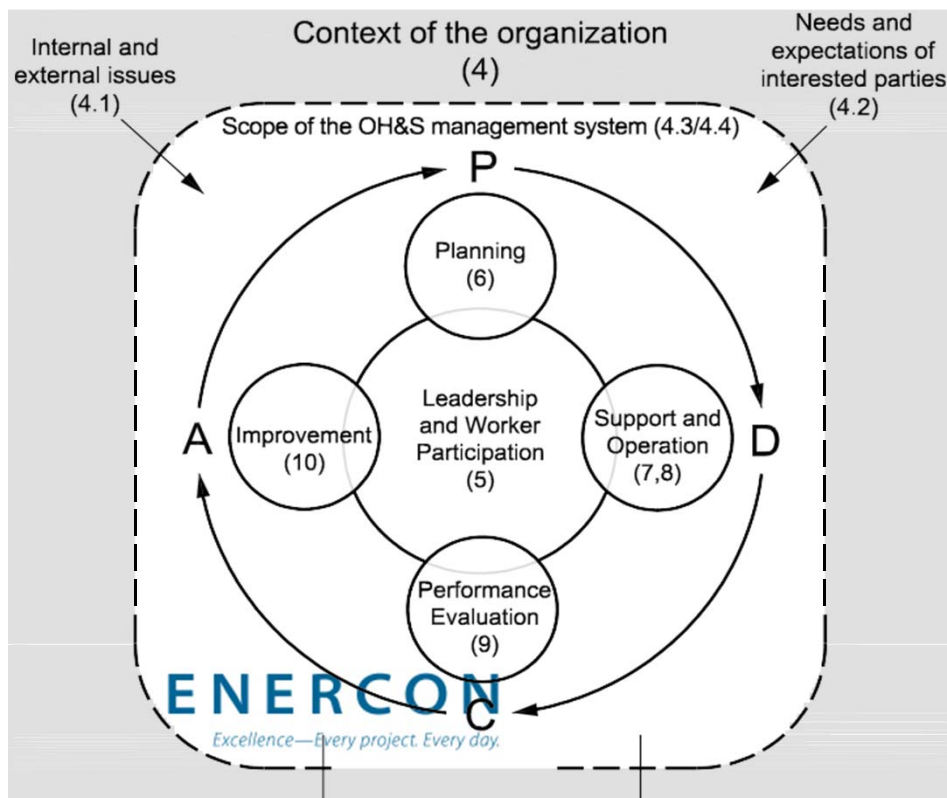
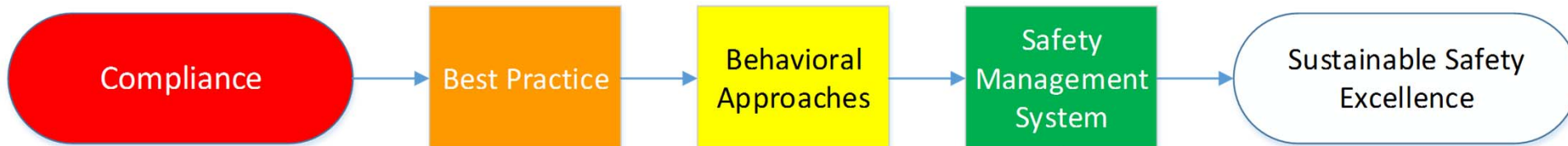


- *“Reasonably practicable is a narrower term than ‘physically possible’*
- *...and implies that a computation must be made...*
- *in which the quantum of risk is placed in one scale...*
- *and the sacrifice involved in the measures necessary for averting the risk (whether in time, trouble or money) is placed in the other”*

Edwards v National Coal Board, 1949



Safety Excellence*



BENCHMARKING Q&A I



What Do You Currently Have In Place?[?]

(to prove you're not endangering your workers)

- Do you know what your top risks are?
- Are they in some form of risk register?

Hazard	Severity	Probability	Risk	Mitigation	Residual Risk
MVI	Major	Occasional	High	Defensive Driver Trg.	Medium (Major/Remote)
Slips & Trips	Significant	Occasional	Medium	Human Perf. Trg. & PPE	Low (Significant/Remote)
Falls	Major	Remote	Medium	Fall Protection Trg. & Equip.	Low (Light/Remote)

Risk Register Plotted onto Risk Matrix? (aid management decision making)



Risk Matrix

	Light	Significant	Major	Critical
Frequent	M	H	VH	VH
Occasional	L	M	H	VH
Remote	L	L	M	H
Improbable	L	L	L	M

Annotations: A green horizontal line with circles containing the number 3 spans from the 'Remote' row, 'Light' column to the 'Remote' row, 'Major' column. A vertical line with a circle containing the number 2 goes from the 'Occasional' row, 'Significant' column down to the 'Remote' row, 'Significant' column. Another vertical line with a circle containing the number 1 goes from the 'Occasional' row, 'Major' column down to the 'Remote' row, 'Major' column.

Residual
As Low

Hazard	Severity	Probability	Risk	Mitigation	Residual Risk
MVI	Major	Occasional	High	Defensive Driver Trg.	Medium (Major/Remote)
Slips & Trips	Significant	Occasional	Medium	Trg. and PPE	Low (Significant/Remote)
Falls	Major	Remote	Medium	Fall Protection Trg. & Equip.	Low (Light/Remote)

DEFINITIONS & DISCUSSION II



The 4Ts of Risk Management



- **Tolerate**
 - A risk is defined as tolerable when the overall risk classification is deemed acceptable after confirming that the benefit gained from continuing the activity merits continuing exposure to the risk (Classic CBA)
- **Treat**, mitigate the risk by reducing:
 - The **exposure** to the occurrence
 - Implement a work from home policy (CBA on productivity?)
 - The **probability** of occurrence
 - Train all employees in defensive driving (effective training?)
 - The **severity** of the occurrence
 - Fit cars with airbags, etc. (doesn't stop occurrence, lessens severity – classic limited benefit of PPE)

The 4Ts of Risk Management



- **Transfer**

- It may be possible to insure against the risk (all loss covered?)
 - Liability and workers compensation insurance covers some of the cost to the employer for major injury
 - Not possible to insure against reputational loss
- Up the Duty Holder (DH) / Risk Owner (RO) chain (**if your company has one!**)
 - Doesn't own any more treat "levers"
 - Reluctant to terminate
 - Unable to tolerate

- **Terminate**

- DHs have an inescapable responsibility to cease the activity if risks are identified that are not demonstrably tolerable and As Low As Reasonably Practicable (ALARP)
- "Worker Endangerment" encourages a proactive approach to hazard and risk identification and management

Note: this approach is not new. Elements of the safety world (e.g. aviation) and financial risk management use similar approaches

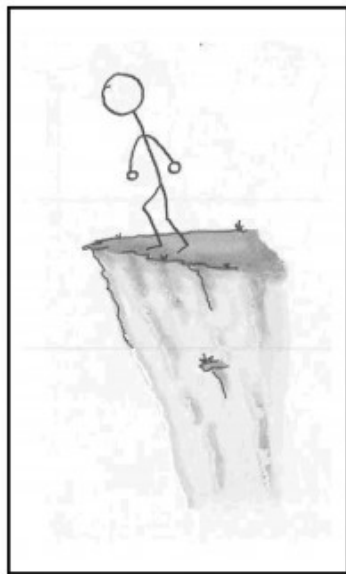
BENCHMARKING Q&A II



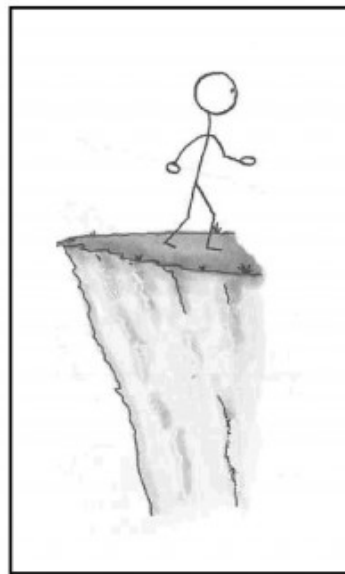
Do You Have a Set Approach to Mitigate Your Risks?



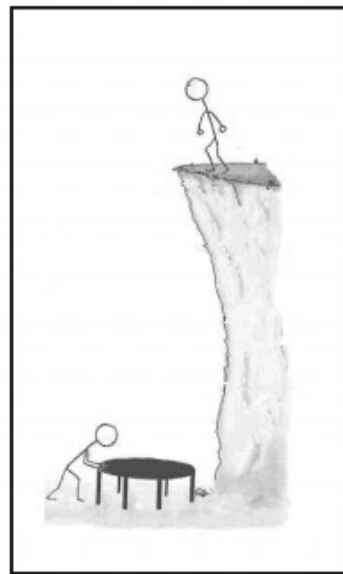
- The 4 T's:



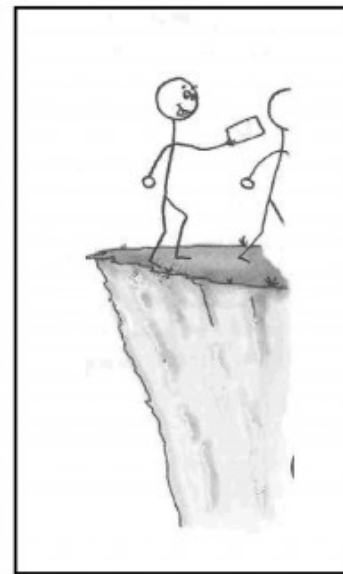
Your project



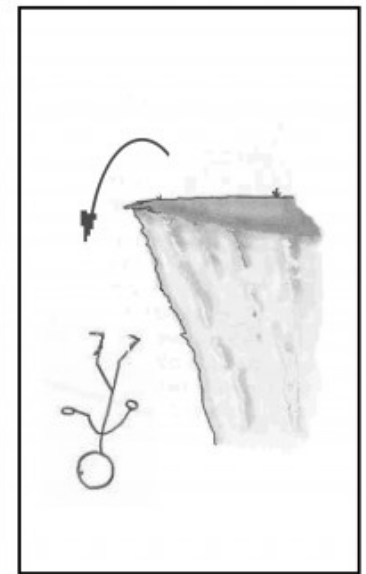
Avoid



Mitigate



Transfer



Accept

— Tolerate



“Duty Holders” Do You Have Risk Owners?



<i>Risk Matrix</i>				
	Light	Significant	Major	Critical
Frequent	M	H	VH	VH
Occasional	L	2 M	1 H	VH
Remote	L	L	M	H
Improbable	L	L	L	M

VH = CEO or President (EDH/ERO)

H = Division VP (SDH/ERO)

M = Division Director (ODH/ORO)

L = Office Engineering Manager (DDH/DRO)

SUMMARY & NEXT STEPS



“Safety Case”

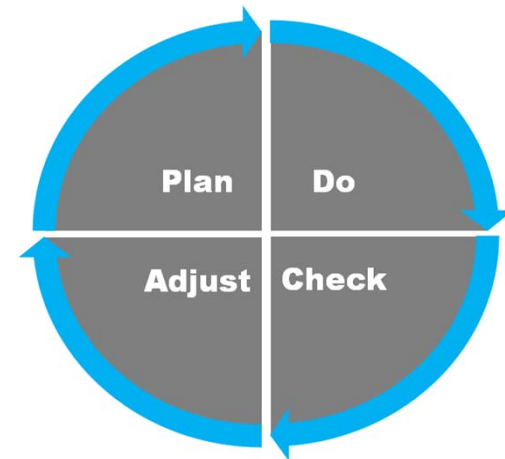


- Hazard identification and analysis
- Risk Management
 - 4 T’s Approach
 - An ALARP Process:
 - Risk Register
 - Risk Matrix
 - Clearly defined Duty Holders/Risk Owners
- Safety Case sits within your Safety Management System
 - OSHA Program Management Guidelines, ANSI/ASSE Z10, OHSAS 18001, ISO 45001
 - DOE Integrated Safety Management System, IAEA Safety Leadership and Management, API RP 1173

Next Steps



- Review and revise risk management protocol to **effectively prioritize** worker safety issues **above mere OSHA compliance**
- Identify a **strategic plan** towards a joined up and proactive SMS
 - Gap Analysis
 - Assess the company's worker safety (and Environmental) track record and vulnerabilities through a Safety Management System Gap Analysis (or a Safety and Environmental Management System) Gap Analysis
 - Develop
 - SMP & supporting programs
 - SMP = 8 pages!
 - Implement
 - Leadership Commitment
 - Employee Engagement
 - Training!
 - Maintain
 - Celebrate Success
 - Coach
 - Audit against requirements > Continuous Improvement
 - Drive the cycle!





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