



# A Risk-Based Approach to Manage Catastrophes

Suzanne Kupiec, Advisory Partner

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# Agenda

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## 1 Black Swan Event

Learn about Black Swan event and Catastrophic risk

## 2 Systematic Application of Risk Management

Systematic application of risk management practices to managing catastrophes

## 3 Impact of Regulatory Framework to Catastrophes

Introduce Prescriptive Approach and Risk-based Approach

## 4 React to Catastrophes

Preparedness in reacting to catastrophes

# Black Swan Event

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- ▶ What is a Black Swan event?
  - ▶ A catastrophe can strike without warning.
  - ▶ Never considered or thought to be impossible. Proven to be possible and real by its sudden appearance.
- ▶ Three Characteristics:
  - ▶ Rarity
  - ▶ Extreme impact
  - ▶ Retrospective (though not prospective) predictability
- ▶ The combination of low predictability and large impact makes the Black Swan a great puzzle.

# Black Swan Event

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- ▶ Black Swan Examples:
  - ▶ 911
  - ▶ Recent /ongoing global credit crisis
  - ▶ 2010 BP Oil Spill
  
- ▶ The yet unknown, large, unexpected event neither conceived nor articulated is likely to rock the business the most
  - ▶ Leading risk practices are the only real preventive measure
  - ▶ Help *expect the unexpected*

# A performance and risk-based framework – systematically applying risk management practices



# Regulation Framework - Risk-based Approach

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- ▶ Companies need to demonstrate to the regulator that appropriate risk management systems are in place
- ▶ Regulations are seen in relation to the specific risks faced by the company
- ▶ Companies are required to:
  - ▶ Systematically identify risks
  - ▶ Reduce risks to internally defined acceptance levels
  - ▶ Control risks
  - ▶ Safety and contingency measures must be commensurate with the risk
  - ▶ Use the identified risks as the basis for prioritizing decisions
  - ▶ Risk picture must be subject to regular updates
  
- ▶ **International community has adopted risk-based approaches for energy production**

# Regulation Framework - Prescriptive Approach

- ▶ Based on laws and regulations
- ▶ Set specific demands for structures, technical equipment and operations
- ▶ Regulatory authorities specify the requirements and monitor compliance
  
- ▶ **US regulations - primarily prescriptive**

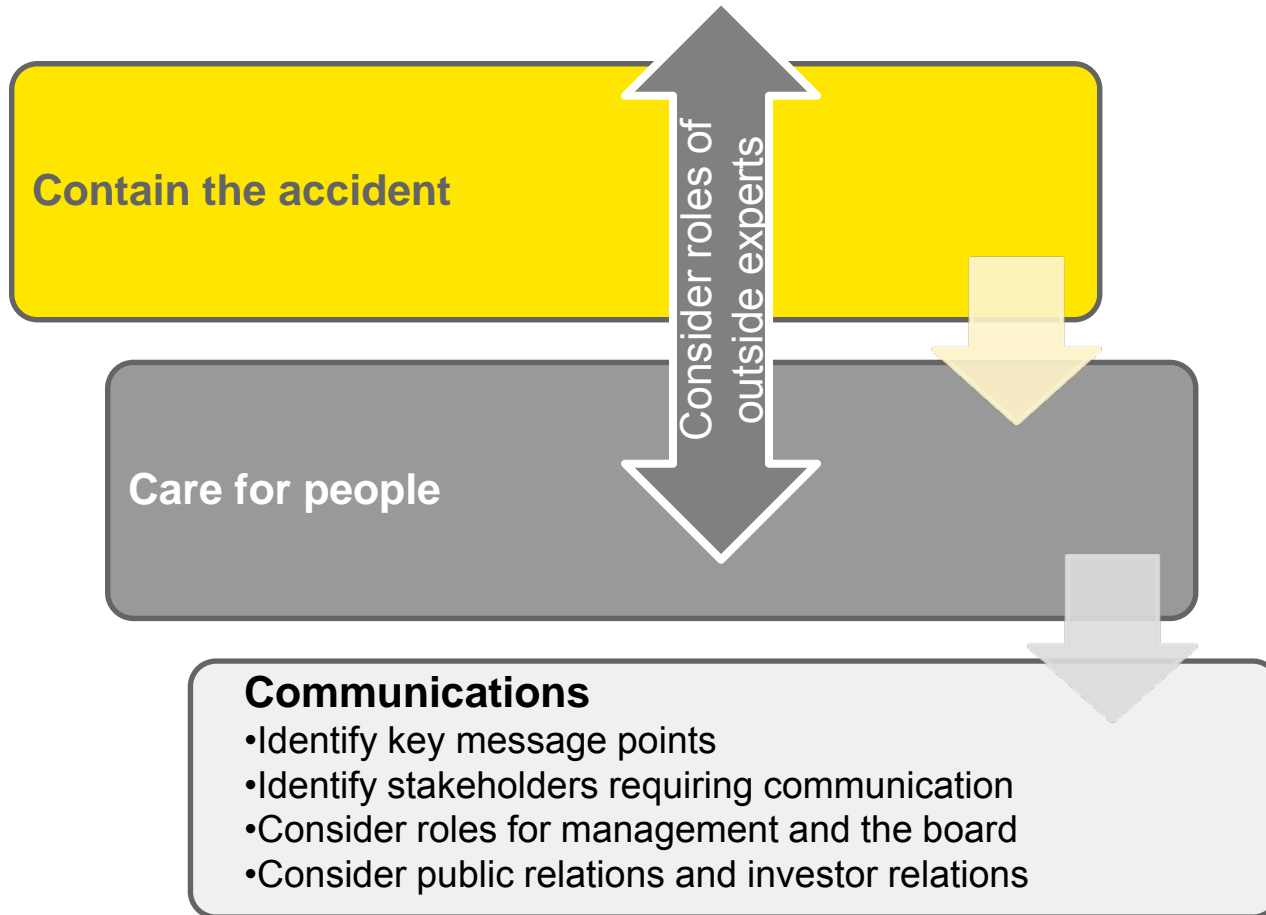
*“... prescriptive approach has often turned out to encourage a passive attitude among the companies. They wait for the regulator to inspect, identify errors or deficiencies and explain how these are to be corrected. As a result, the authorities become, in some sense, a guarantor that safety in the industry is adequate and take on a responsibility which should actually rest with the companies.”*

*Petroleum Safety Authority (Norway)*

# Benefits of going beyond prescriptive regulatory compliance

<b>Deliver incremental value</b>	<ul style="list-style-type: none"><li>▶ Provides clarity on roles and responsibilities and expectations between the various partners</li><li>▶ Contributes to the oversight and ongoing assessment of the partners' most strategic initiatives</li><li>▶ Reinforces the tactics of a risk management culture</li></ul>
<b>Minimize downside risk</b>	<ul style="list-style-type: none"><li>▶ Comprehensive risk assessment performed to identify key risks – with regular updates</li><li>▶ Identifies risks and assists in determining boundaries and tolerances</li><li>▶ Common risk management process aligns partners</li></ul>
<b>Deliver cost savings</b>	<ul style="list-style-type: none"><li>▶ Risk mitigation and barriers focused on high impact risks</li><li>▶ Tangible losses and future loss exposure (e.g., business interruption, lost work days, internal and external investigation costs, fines, penalties and judgments)</li></ul>

# Focus on prevention, but be prepared to react



- ▶ Plans should be ready to execute with accountability and ownership assigned and completion timeframes
- ▶ Detailed contingency plans enable improved accident response

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*“The ancient Romans had a tradition: whenever one of their engineers constructed an arch, as the capstone was hoisted into place, the engineer assumed accountability for his work in the most profound way possible: he stood under the arch.”*

-- Michael Armstrong



Thank You