National Association of Corporate Directors Philadelphia Chapter

Enterprise Risk Management:

Risk Factors, Board Oversight and Perspectives on Successful Methodologies

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Enterprise Risk Management
Risk Factors, Board Oversight and Perspectives on Successful Methodologies

Agenda

- ERM Primer
- Inertia of ERM Programs
- Ten Basic Risk Factors
- Bhopal Disaster & Recent Events
- Lessons Learned
- Instituting an ERM Program & Incorporating Risk Factors

What is ERM?

Enterprise Risk Management is a process to identify, assess and mitigate risk.

"… a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risks to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives."

Source: COSO Enterprise Risk Management – Integrated Framework. 2004.

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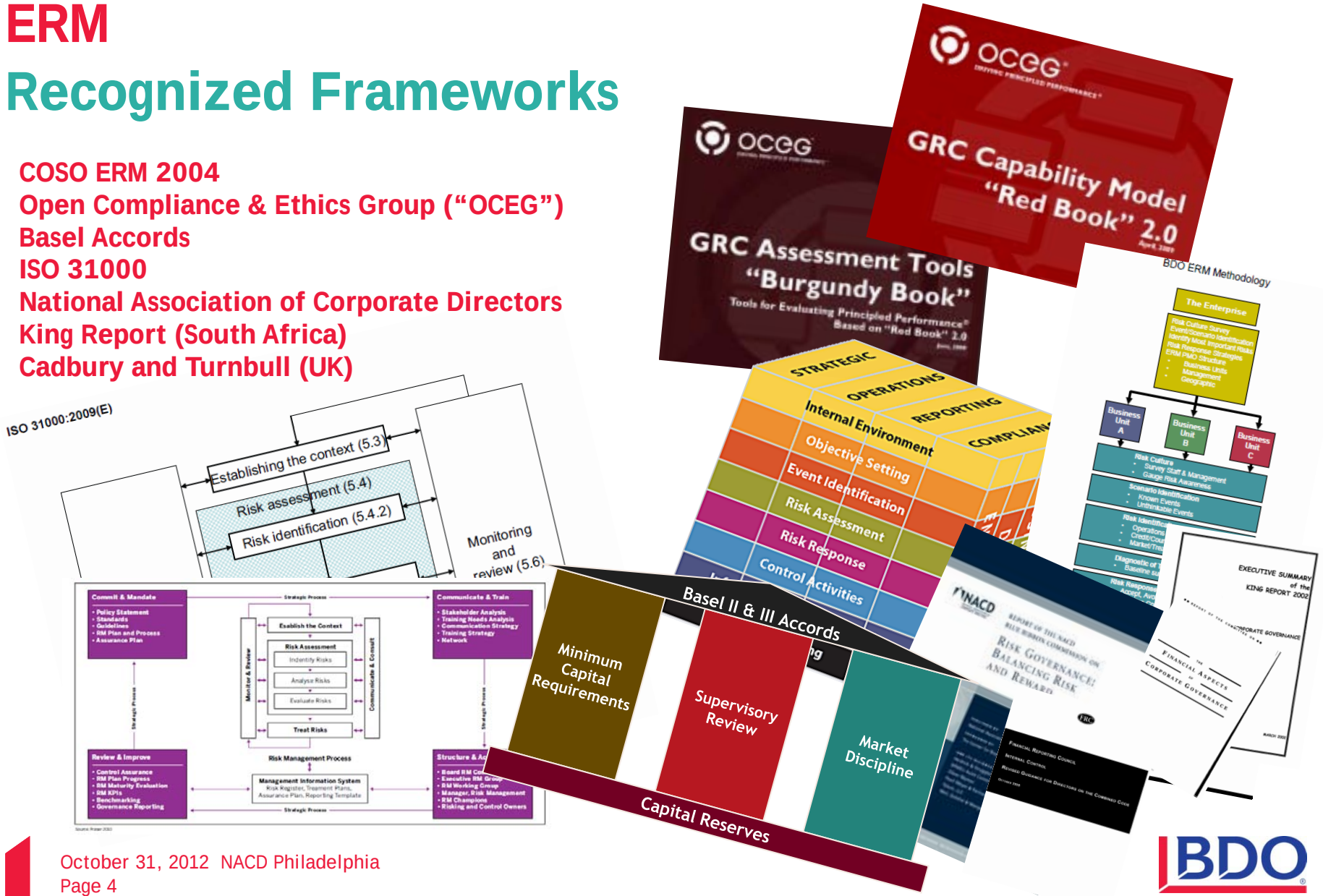
Recognized Frameworks

COSO ERM 2004
Open Compliance & Ethics Group ("OCEG")
Basel Accords
ISO 31000
National Association of Corporate Directors
King Report (South Africa)
Cadbury and Turnbull (UK)

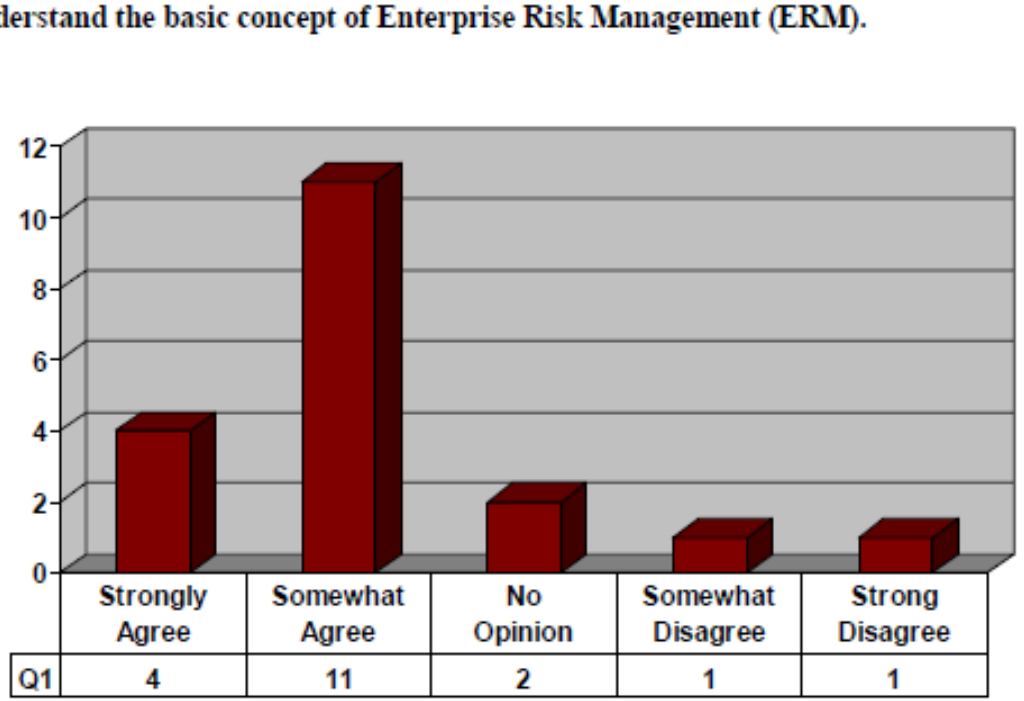


ERM
Continued Misunderstanding of ERM

Surveys detail inconsistencies

Individual beliefs vs. Collective understanding

"I get, but they don't."



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Continued Misunderstanding

"I get, but they don't."

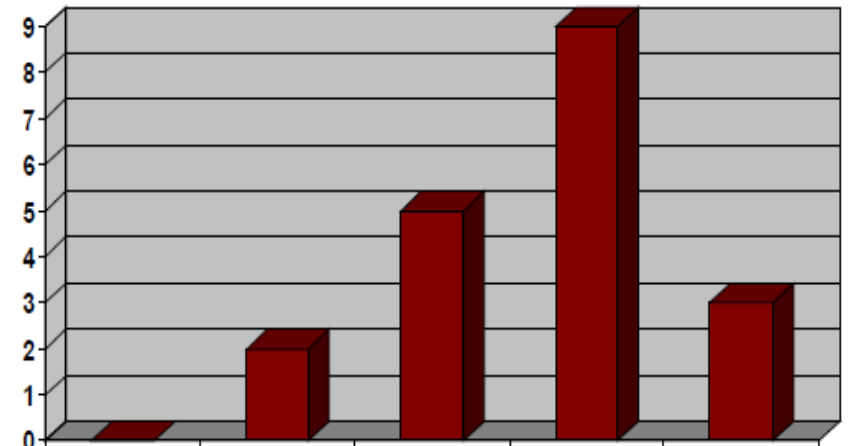
ERM continues to be elusive

Frameworks are principles based

Lack of universal understanding

Amorphous and arcane

ABC's Risk Management Philosophy is well developed, understood, and embraced by ABC personnel.



	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strong Disagree
Q2	0	2	5	9	3

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Results of Recent Polling

Current State of Enterprise Risk Oversight – July 2012
North Carolina State University, Poole College of Management & AICPA
618 Responses from CFOs or equivalent senior positions

62% believe volume and complexity of risks has significantly changed in past 5 years
68% have been caught off guard (somewhat to extensively) by an operational surprise in past 5 years

23.4% have "complete" ERM processes in 2012 (vs. 8.8% in 2009)
46% of largest, public organizations have "complete" ERM process vs. 10% of not-for-profit in 2012.
40% have no ERM process in place.

66% of organizations experience pressure from Board or regulators for more information about risks.
50% have a risk committee in 2012 (vs. 22% in 2009) – over 70% of large, public & financial services
38% of organizations maintain inventories of risk in 2012 (vs. 19% in 2009)
50% report risks at least annually to the board in 2012 (vs. 26% in 2009)

Not-for-profits report fewer than **5** risks to the board (vs. large, public report between **5 and 19** risks)
Under **33%** articulate "appetite" and "tolerance" of risks

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Ten Risk Factors

Operational Risk Management:
a case study approach to effective planning and response

by

Mark D. Abkowitz

Extends back 30 years or so
3 Types of hazard - Natural disasters, man made disasters, terrorism
Many events may be familiar
All relate to what is happening today

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Ten Risk Factors

1. Design & Construction Flaws

- Designed to withstand forces
- Otherwise, prone to failure
- Faulty components, not assembled properly

2. Deferred Maintenance

- Continuous operation vs. Shut down
- Procrastinate especially when not malfunctioning
- One or multiple component failures

3. Economic Pressures

- Limited funding, tight budgets, strict cost cutting measures
- Shoddy workmanship, lower quality materials, eliminating backups

4. Schedule Constraints

- Eliminating important details
- Parallel tasks vs. Sequenced tasks

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Ten Risk Factors

5. Inadequate Training

- Training not viewed as productive
- Contributes to mistakes

6. Not Following Procedures

- Repetitive activities give way to complacency
- Deviate from strict protocols
- Neglect or invention of new ways to accomplish tasks
- Others assume protocols are being followed

7. Lack of Planning and Preparedness

- Little forethought to the variety of scenarios, magnitude, alternatives, update

8. Communication Failure

- Inter- and Intra- organizational communication breakdown
- Communication breakdown to the public

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Ten Risk Factors

9. Arrogance

- Overconfidence with an experienced person
- Individuals driving to succeed without regard for others
- Culture with a fear of reprisal to those who complain
- “I can handle anything.”
- Individual and corporate arrogance

10. Political Agendas

- Micro and macro levels of politics
- Developing countries seeking elevated status
- Relaxed safety standards

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Ten Basic Risk Factors and Events

	Design & Construction Flaws	Deferred Maintenance	Economic Pressures	Schedule Constraints	Inadequate Training	Not Following Procedures	Lack of Planning & Preparation	Communica-tion Failure	Arrogance	Political Agendas
Hyatt Regency	X		X	X		X		X	X	
Bhopal	X	X	X		X	X	X	X	X	X
Chernobyl	X			X		X		X	X	X
Exxon Valdez	X		X			X	X	X	X	X
Challenger/ Colombia	X	X	X	X		X		X	X	X
Oklahoma City	X						X	X		X
Aum Shinrikyo					X		X	X		X
USS Cole			X			X	X	X	X	X
World Trade Center	X		X				X	X		X
London			X				X	X		X
Edmund Fitzgerald		X	X	X		X	X	X	X	
Mount St. Helens			X				X	X		
South Canyon				X	X	X	X	X	X	
Sumatra-Andaman			X		X		X	X		
Hurricane Katrina	X	X	X			X	X	X		X

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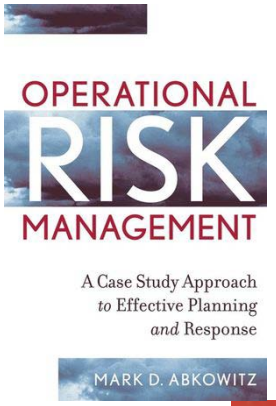
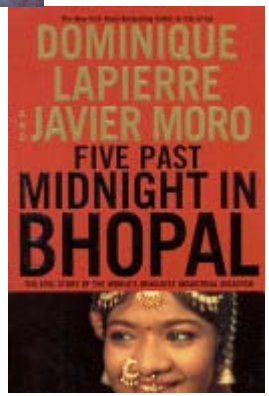
Ten Risk Factors – Bhopal, India

Situation

- Bhopal, India
- Union Carbide Corporation (UCC) and subsidiary (UCIL)
- December 2, 1984, 11:30PM local time
- 40 tons of methyl isocyanate (MIC) accidentally released
- 3,800 fatalities
- 11,000 immediate injuries
- Perhaps 15,000 subsequent deaths from residual MIC exposure
- 578,000 injured





Five Past Midnight in Bhopal
By
Dominique Lapierre & Javier Moro

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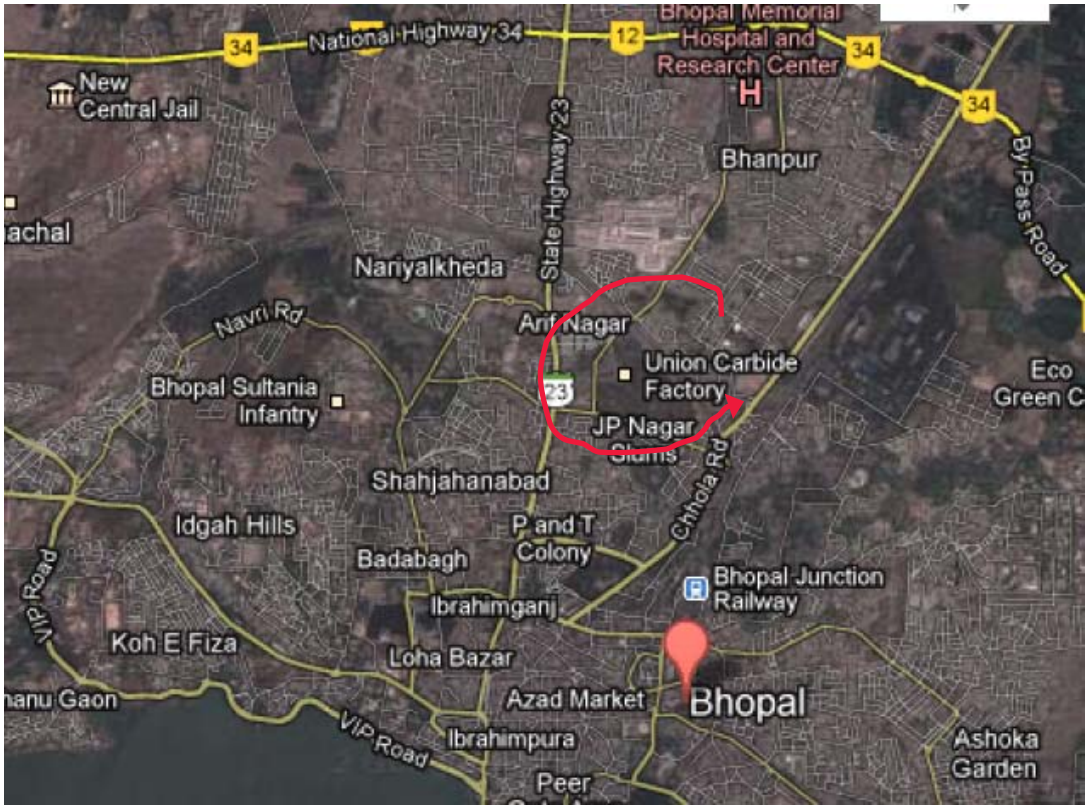
Ten Risk Factors – Bhopal, India



Provided by Google Maps

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Ten Risk Factors – Bhopal, India

Series of Events

1934 Union Carbide enters India
- India's lax safety culture
- low labor costs
- untapped markets in India

Green Revolution – 60's and '70's
- Rising crop production
- More pesticides
- 1969 UCC and UCIL establish Bhopal factory and 13 others
- Ideal location
- Neighbor-hoods grew around the plant

December 2, 1984, 11:30pm
- 132 gallons of water seeped into MIC storage tank
- Reacted with MIC
- 40 tons of vapor leaked
- Workers eyes burning, notify supervisor

12:20pm
- Supervisor takes action
- 12:50am first toxic alarm sounded in plant
- Spraying water was deemed futile
- Workers flee upwind
- 2am public alarm is sounded
- Residents awoke in distress

Gas plume
- Gas spreads 5 miles down wind
- 8 square miles
- 900,000 people affected
- 3,800 fatalities
- 400,000 injured or disabled
- Thousands of livestock destroyed
- Tree defoliation

Methyl Isocyanate "MIC" -
a highly reactive, extremely hazardous substance;
is known to cause severe damage to the lungs, digestive tract, skin, reproductive organs, and eyes
- even under short-term exposure

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Ten Risk Factors – Bhopal, India

Series of Events

December 4, 1984

- UCC headquarters notified
- UCC downplays toxicity of MIC
- Internal documents describe deadly potential
- Warren Anderson, CEO, travels to site and arrested
- Anderson posts $2,000 bail and returns to the USA

UCC and India Government 1984 - present

- Indian government sought $3.3 billion in damages in US court
- Claim was dismissed
- 1989 settlement for $470 million, no indication of criminal or civil wrongdoing
- most victims did not receive compensation until 2009
- 1999 DOW subsumes UCC
- 2003 Warren Anderson, culpable homicide

Today

- 15,000 deaths from residual exposure
- several hundred thousand still affected
- Groundwater contains high concentrations of toxic chemicals
- Stocks of hazardous chemicals remain abandoned at facility

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Ten Risk Factors – Bhopal Failures

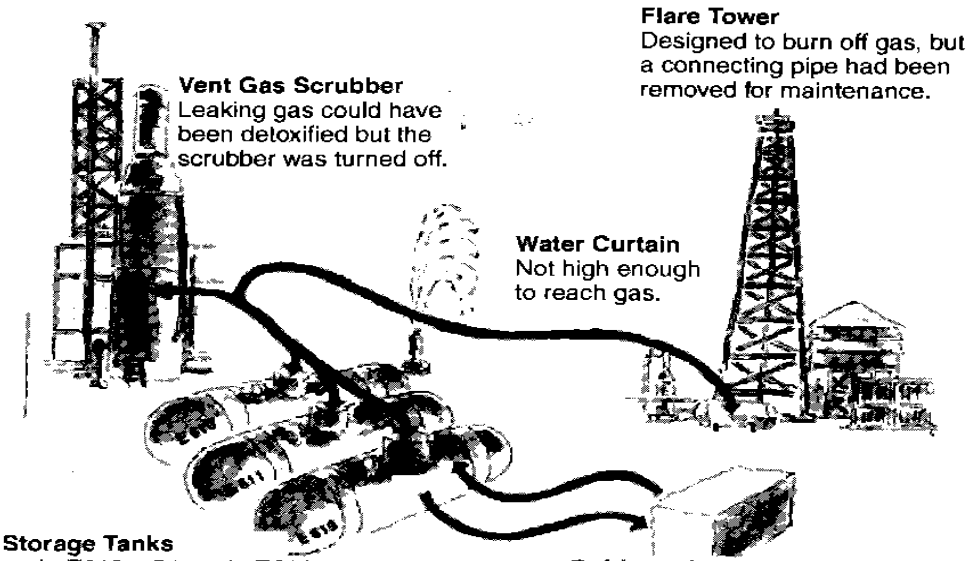

EXHIBIT 3.2 *Some of the major safety and containment failures during the Bhopal gas leak*

UCC contends sabotage. Workers believe water seeped into the tank as part of a routine cleaning procedure. Unclear if water seeped due to inability to follow procedure or inadequate training.

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Risk Factors Contributing to Bhopal Disaster

Design and Construction Flaws	• Gas scrubber to capture released MIC was designed for ¼ of the volume • Flare tower designed for less capacity • Water curtain was too short • Storage tank was filled to over-capacity, overflow tank was already full • 30 day supply of MIC kept on hand – dangerous oversupply
Deferred maintenance	• Water was unable to drain due to clogged bleeder lines • Leaky valves allowed water into MIC tank • Temperature and pressure gauges were deemed unreliable • Refrigeration for MIC not functioning, results in overheating • Temperature alarm did not function
Economic pressures	• Bhopal plant was never profitable with MIC production • Over half of workforce eliminated, maintenance reduced to 2 prior to accident • Remaining workforce – job insecurity, low wages, performed tasks they were not trained • Deferred maintenance, inferior components, some components shut down
Inadequate training	• Workers unaware of their responsibilities
Not following procedures	• Gas scrubber was shut down for maintenance • Flare tower shut off for maintenance
Lack of planning and preparedness	• No indication of any formal emergency response plan • Residents fled to the worst areas • UCC did not inform local hospitals of chemicals used at the plant
Communication Failure	• Local attorney threatened legal action for lax safety in 1983 • UCC's hands off policy – inadequate communication of dangers • Operating manuals in English vs. Hindi, local language.
Arrogance	• UCC Audit Report contained 60 hazards, 30 considered major, 11 concerned MIC, and significant likelihood of a major release • Report and other warnings were not addressed • An "understanding" that safety would not be enforced
Political Agendas	• Identical plant in West Virginia, similar issues were addressed. • Economic development was India's highest priority.

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Ten Risk Factors – Accidental Drowning

May 28, 2011

3 ½ years old

Design flaw?

Economic Pressure?

Inadequate training?

Not following procedures?

Lack of planning and preparedness?

Arrogance?

Political Agendas?

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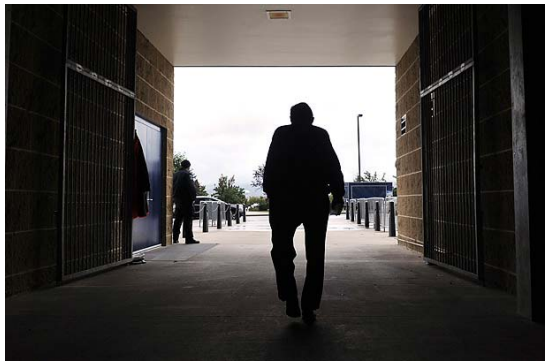
Ten Risk Factors – Penn State

Sacred Football Program

Economic engine of the University and Athletic Program

Beloved Coach (living Saint to many, curmudgeon to some)

Design flaw – too old to lead football program?
Inadequate training – see something, say something.
Not following procedures – University, police, State Attorney General.
Lack of planning and preparedness – the problem lingered for years.
Communication – who said what to whom, and when?
Arrogance – minors were in great danger
Political agendas – you bet!



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Ten Risk Factors – Lessons Learned

Risk factors work together – disastrous consequences	Political agendas – significance cannot be underestimated
Communication failure in every instance - irrespective of cause	Arrogance – far more significant than previously imagined
Take planning and preparedness seriously – it should never be shortchanged	Lack of uniform safety standards across different nations – uneven risk playing field
Economic pressure is a chronic problem	Not following procedures – in every man made accident
Design & construction flaws – the bane of man made accidents	Risk is unavoidable in life – so identify and prioritize

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Ten Risk Factors
In the Context of ERM

C-Suite
aka "Bridge"

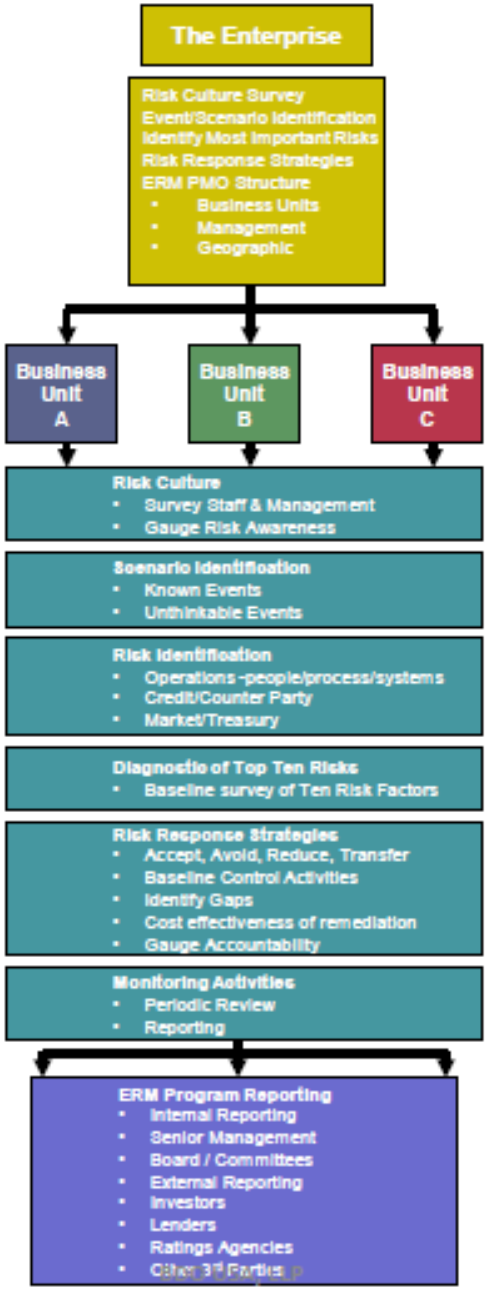
Staff
aka "Engine Room"

Survey of Risk Factors

Design Flaws?
Deferred Maintenance?
Economic Pressures?
Schedule Constraints?
Inadequate Training?
Not Following Procedures?
Lack of Preparedness?
Quality of Communication?
Arrogance?
Political Agendas?

Identify "gaps"
Develop mitigating actions

BDO ERM Methodology



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