



National Energy
Board

Office national
de l'énergie

Management Systems and Safety Culture Advancement: One Regulator's Journey

Presented at the California Public Utilities
Commission En Banc

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Canada

The views, judgments, opinions and recommendations expressed in this session do not necessarily reflect those of the National Energy Board, its Chairman or members, nor is the Board obligated to adopt any of them.

National Energy Board of Canada

The NEB Regulates:

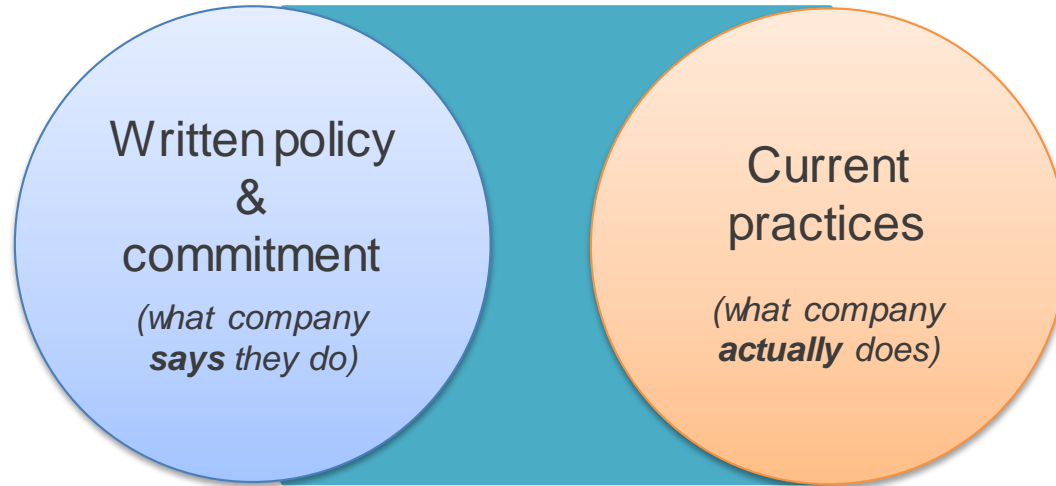
- The application, construction, operation, and abandonment of
 - Inter-provincial and international pipelines
 - International and designated inter-provincial power lines
- Oil and gas exploration and production in Canada's North and certain offshore areas
- The export and import of oil and gas, and the export of electricity
- Pipeline traffic, tolls and tariffs

Organizational Accidents

- Rare events but catastrophic in effect
- Consequences are widespread
- Multiple defenses are breached
- Multiple causes involving many people
- Errors in judgment and decision-making present

Relationship Between Management Systems & Safety Culture

Gap between what is said and what is done



Relationship Between Management Systems & Safety Culture



U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

INVESTIGATION REPORT

VOLUME 3

DRILLING RIG EXPLOSION AND FIRE AT THE

MACONDO WELL

(11 Fatalities, 17 Injured, and Serious Environmental Damage)



DEEPWATER HORIZON RIG

MISSISSIPPI CANYON 252, GULF OF MEXICO

APRIL 20, 2010

KEY ISSUES:

- HUMAN FACTORS
- ORGANIZATIONAL LEARNING
- SAFETY PERFORMANCE INDICATORS
- RISK MANAGEMENT PRACTICES
- CORPORATE GOVERNANCE
- SAFETY CULTURE

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regulators, Bureau of Safety and Environmental Enforcement (BSEE), suggest that some companies use their safety and environmental management system (SEMS) programs¹² to document regulatory compliance rather than to actually manage risks.¹³ In fact, post-incident CSB analyses of Transocean and BP risk management policies at the time of the blowout reveal that many of the policies would have satisfied current SEMS requirements. Yet the companies did not effectively implement these policies to manage the major accident risks of the Macondo well, and the companies were not held accountable by the regulator to ensure that they managed safety as their company policies stipulated. Beyond BP and Transocean, the CSB found a lack of US offshore industry regulations and guidance for human factors,

Onshore Pipeline Regulations: Management System Requirements



National Energy Board Management System and Protection Program Audit Protocol

17 July 2013



NEB MANAGEMENT SYSTEM AND PROTECTION PROGRAM – AUDIT ELEMENTS

1.0 POLICY AND COMMITMENT

1.1 Leadership Accountability

Expectations: The company shall have an accountable officer appointed who has the appropriate authority over the company's human and financial resources required to establish, implement and maintain its management system and protection programs, and to ensure that the company meets its obligations for safety, security and protection of the environment. The company shall have notified the Board of the identity of the accountable officer within 30 days of the appointment and ensure that the accountable officer submits a signed statement to the Board accepting the responsibilities of their position.

References:¹

<u>Environment:</u> OPR ² section 6.2	<u>Safety:</u> OPR section 6.2	<u>Integrity:</u> OPR section 6.2	<u>Crossings and Public Awareness:</u> PCR Part II ³ section 4; OPR sections 6.1, 6.2, 40, 47, 48	<u>Emergency Management:</u> OPR section 6.2	<u>Security:</u> OPR section 6.2
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1.2 Policy and Commitment Statements

Expectations: The company shall have documented policies and goals intended to ensure activities are conducted in a manner that ensures the safety and security of the public, workers, the pipeline, and protection of property and the environment. The company shall base its management system and protection programs on those policies and goals. The company shall include goals for the prevention of ruptures, liquids and gas releases, fatalities and injuries and for the response to incidents and emergency situations.

The company shall have a policy for the internal reporting of hazards, potential hazards, incidents and near-misses that includes the conditions under which a person who makes a report will be granted immunity from disciplinary action. The company's accountable officer shall prepare a policy statement that sets out the company's commitment to these policies and goals and shall communicate that statement to the company's employees.

References:

<u>Environment:</u> OPR section 6.3	<u>Safety:</u> OPR section 6.3	<u>Integrity:</u> OPR section 6.3	<u>Crossings and Public Awareness:</u> PCR Part II section 4; OPR sections 6.1, 6.3, 40, 47, 48	<u>Emergency Management:</u> OPR section 6.3	<u>Security:</u> OPR section 6.3
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¹ The "References" in this table contain specific examples of the legal requirements applicable to each element but are not exhaustive and do not represent a complete list of all applicable legal requirements audited to, which are found within the NEB Act and its associated regulations, as well as other applicable legislation, technical and other standards including the *Canada Labour Code* and *CSA Z662*, and any conditions contained within applicable certificates or orders enforced by the Board.

² *National Energy Board Onshore Pipeline Regulations: SOR/99-294 (OPR)*

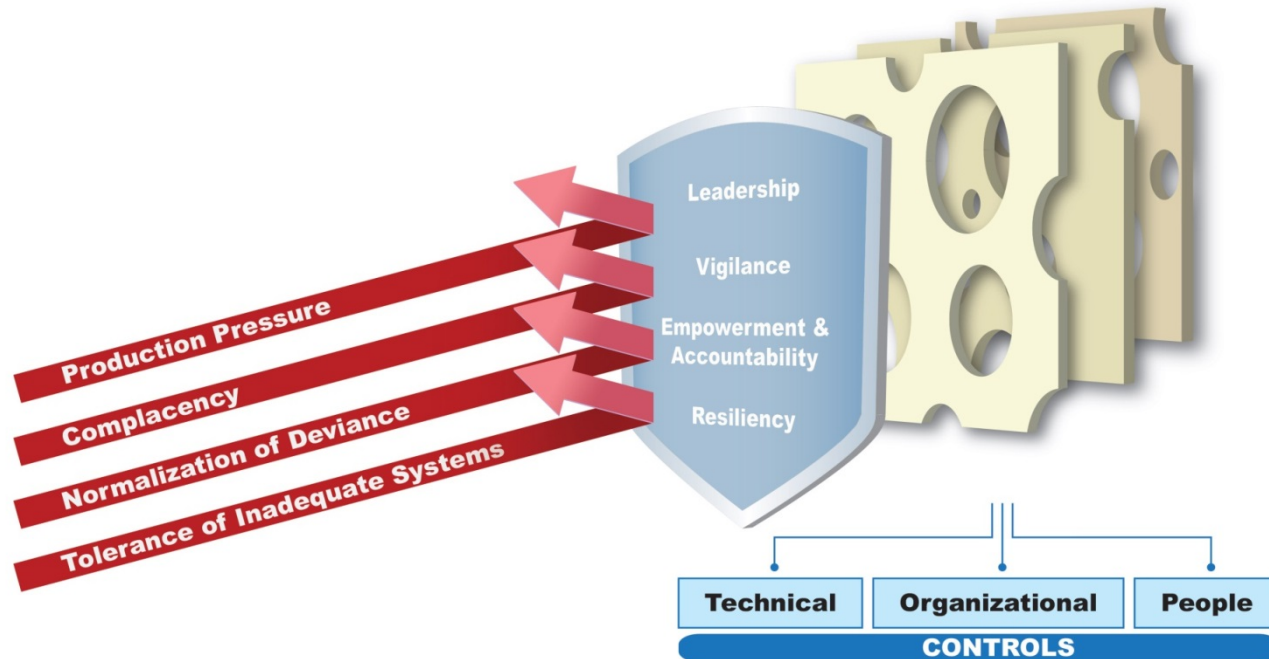
³ *National Energy Board Pipeline Crossing Regulations, Part II, SOR/88-529 (PCR Part II)*

Bridging the Gap

- Be aware of and understand the role that culture plays in preventing organizational accidents
- Build and sustain a positive safety culture while continually monitoring for potential cultural threats
- Establish and foster a healthy safety culture through leadership actions and decisions

The NEB Safety Culture Framework

NEGATIVE DIMENSIONS (CULTURAL THREATS)	POSITIVE DIMENSIONS (CULTURAL DEFENSES)
Production Pressure	Committed Safety Leadership
Complacency	Vigilance
Normalization of Deviance	Empowerment and Accountability
Tolerance of Inadequate Systems and Resources	Resiliency



Safety Culture Indicators

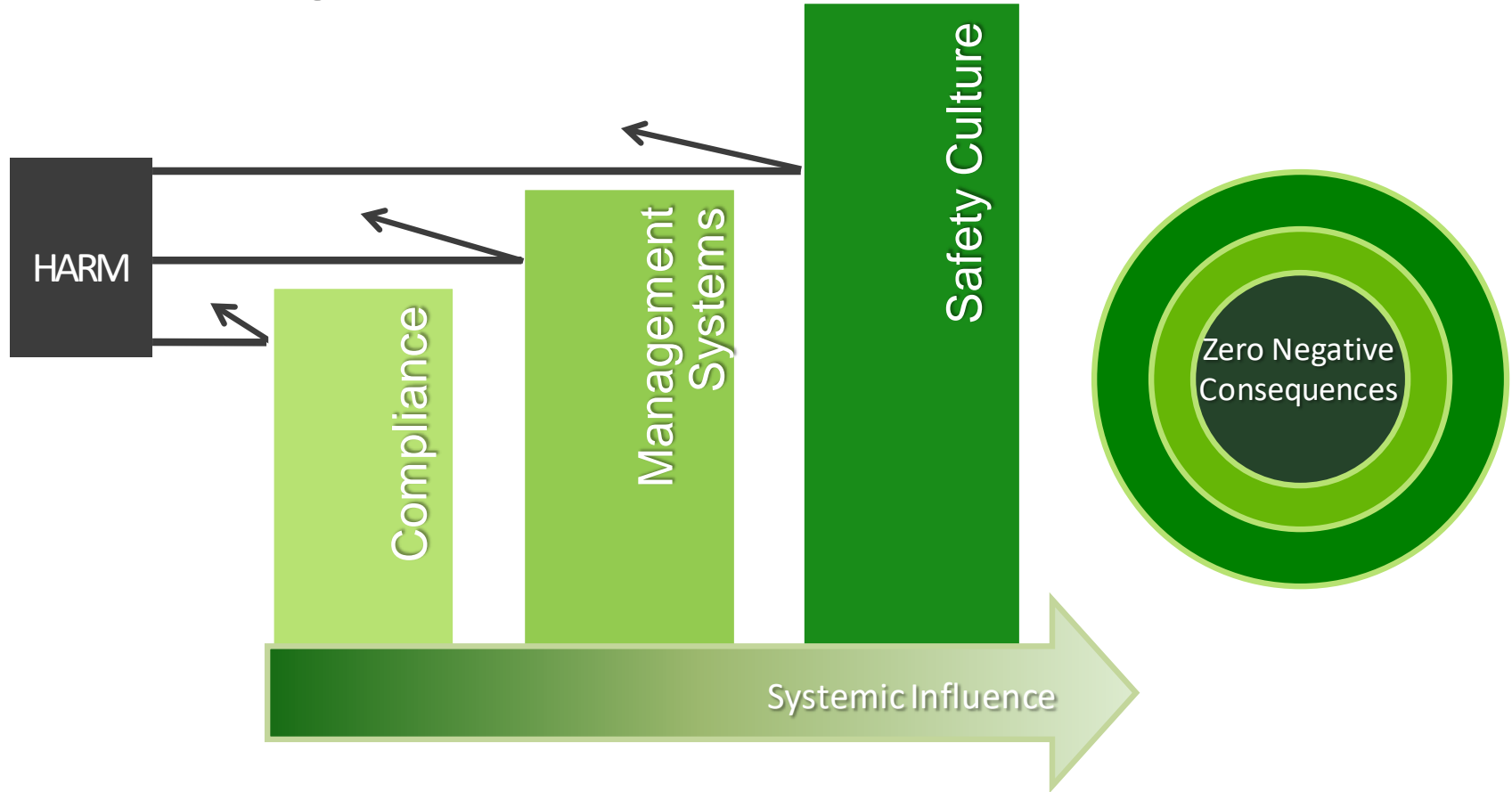
The Indicators Are...

- A detailed, concrete representation of safety culture dimensions
- One part of a broader toolkit to further the understanding of cultural strengths & weaknesses
- A method of identifying data for collection and analysis by culture experts

The Indicators Are Not...

- An audit protocol
- A prescriptive list of regulatory requirements
- A compliance or inspection checklist
- A tool used for regulatory enforcement
- Required to be adopted by industry

Preventing Harm



Regulator Oversight Culture: Lessons from Fukushima

- Regulators must improve their understanding of how internal organizational decisions and actions affect industry attempts to strengthen safety culture (IAEA)
- Regulators need to possess a strong safety culture and assess it periodically (IAEA)...but what does this look like?

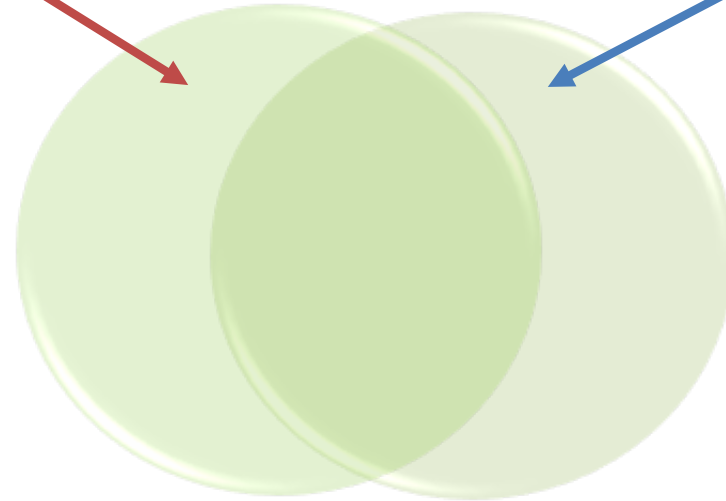
Regulator Safety Oversight Culture

Negative Dimensions	Positive Dimension
Politicized Mission	Leadership and Political Independence
Punitive Culture	Learning Culture
Bureaucratic Inertia	Innovation
Tolerance of Inadequate Capacity and Competency	Technical Excellence
Compliance Mentality	Risk Consciousness
Preoccupation with Active Failures	Systems Thinking

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Improving the Safety System

Regulatory
Management
System and
Safety
Oversight
Culture



Company
Management
System and
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