



The Safety Association for Canada's
Upstream Oil and Gas Industry

A Process Safety Strategy for the Canadian Upstream Industry: A Proposal for Discussion Purposes

A visual guide to Peter Wilkinson's *Process Safety Strategy for Enform: A Proposal for Discussion Purposes*

March 2014

Peter Wilkinson

- As part of Enform's efforts to address our strategic initiative of process safety, a variety of experts in the area of process safety were consulted.
- In the course of our investigation, the work of Peter Wilkinson was brought to our attention. Wilkinson's background is unique:
 - He has tackled process safety related projects on four continents including Europe (UK/North Sea), Australia / New Zealand, Asia (China, Malaysia), South America, and North America.
 - He has served as a consultant both for companies in the industry as well as industry regulators.
 - He has provided process safety consulting services to large, multinational operators—but he has also provided an adapted version of process safety management to upstream drilling contractors to meet their unique needs.
- Given this background and his recent work with upstream operations in particular, Enform asked Peter Wilkinson to provide a “seed document”—a discussion paper to help prime the pump in our discussions regarding the process safety strategic initiative.

Framing the Proposal

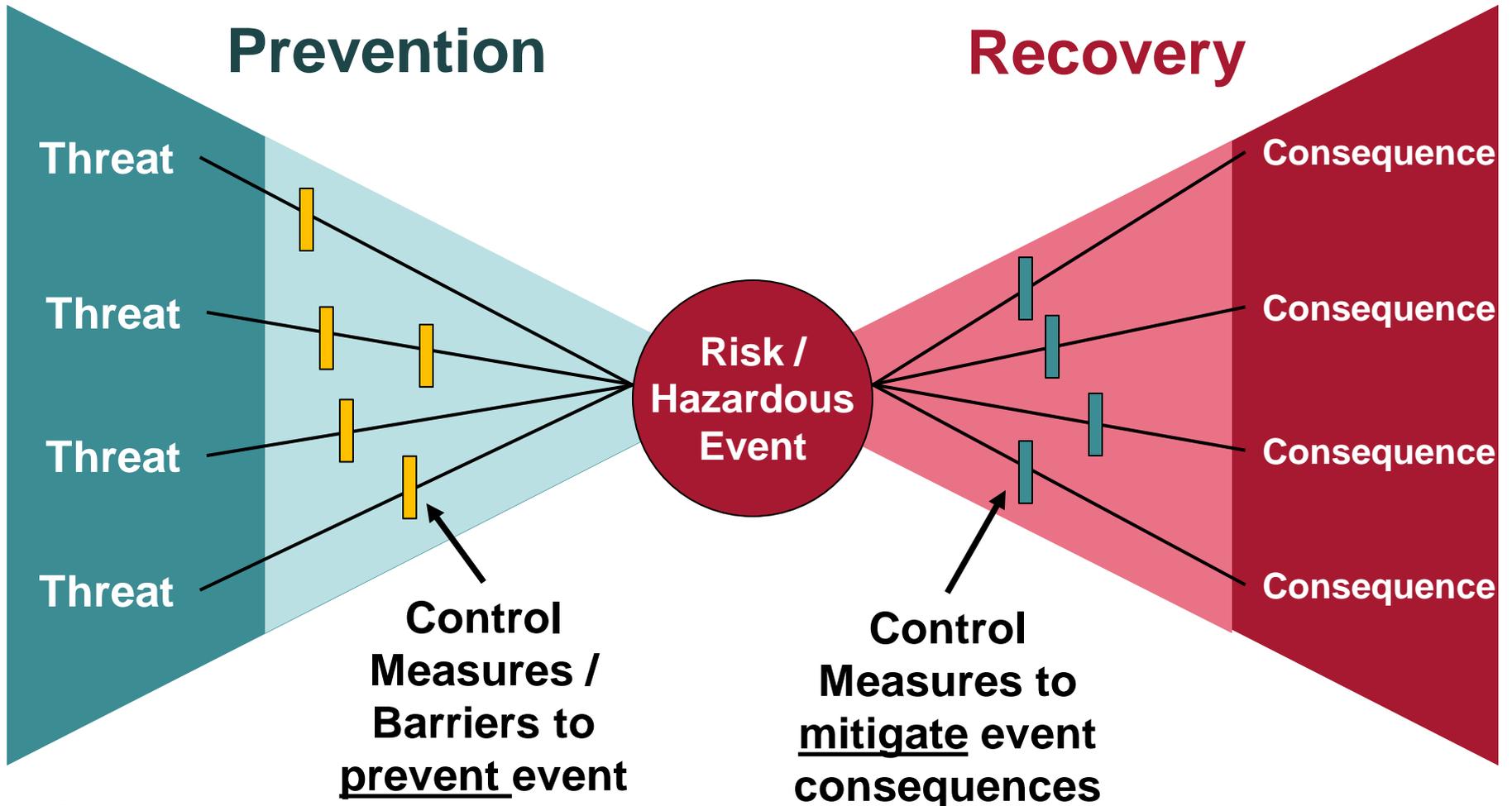
- In particular, we asked him to consider how Enform could help fast track process safety maturity within an upstream industry that had the following characteristics:
 - Large, multinational producers but also small and mid-size producers.
 - Large, multinational drilling and upstream service contractors but also a high percentage of the industry served by small to mid-size companies in the same segments.
 - A regulatory framework and widespread standard industry practices that addressed aspects of process safety—but not typically under the “Process Safety” banner.
 - Enform’s mandate to address needs across the full gamut of companies and operations in the upstream industry.
- What follows is his take on how best to accomplish this end given these Canadian realities and his experience in process safety.

It is important to note—at this point in time, this is a proposal designed to start a conversation—not an endorsed statement on recommended strategy.

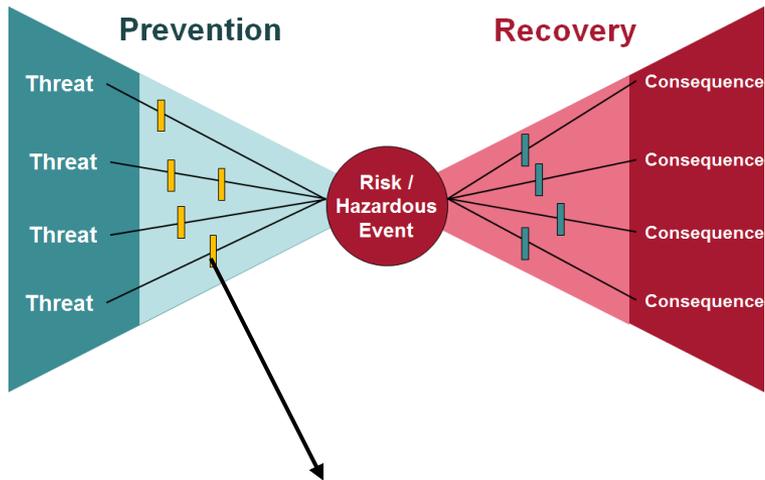
Industry Guidance / Tools

- Peter Wilkinson's Proposal for Enform
 - Guidance document / tools that focus on “quick win” implementation
 - Sell the positive business value
 - Templated / partially pre-populated bowtie analysis
 - Known process hazards with known barriers captured in partially complete operation specific bowties (e.g., drilling, fracing, small gas plant, etc.)
 - Robust accountability system to maintain barriers

Bow Tie Analysis



Monitoring Barriers / Accountability



- Once identified / validated the key is assigning accountability and proactive monitoring for each barrier/control
- Keen on simplifying procedures and clarifying responsibilities

Roles in Barrier Management*

Senior Managers:

Ensure line managers have systems for checking critical barriers and carry out some checks for themselves (“felt leadership”)

Line Managers:

Should ask supervisors how they know front line workers are implementing barriers and carry out some checks themselves (“leadership”)

First Line Supervisor:

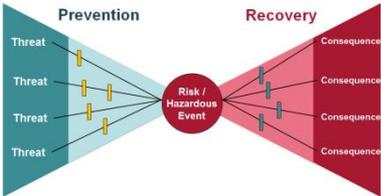
Talk to their direct reports (front line workers) and find out how they are doing their jobs including implementing barriers

Front Line Workers:

Do the work! Implement barriers. Check each other.

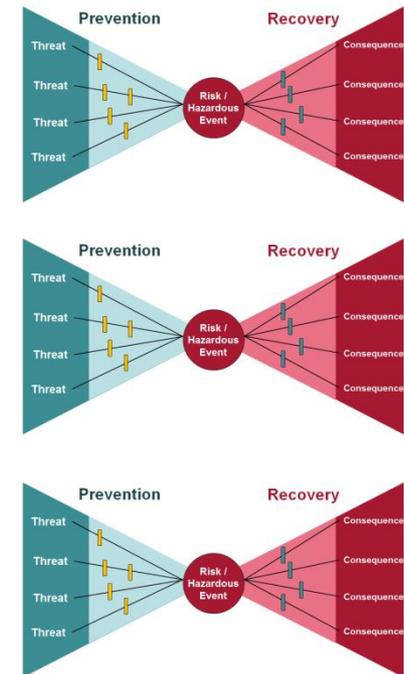
Key: Management of risk controls

Guidance publication(s) that would:

- Define process safety
 - Explain the how and why of an emphasis on barriers
 - Provide practical guidance on bowtie methodology
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- Provide a simplified methodology for summarizing key elements of a barrier – templates to guide more effective accountability and monitoring of barriers

- Given major hazards and effective barriers are already known in most upstream operations, guidance could include partially pre-populated bow ties that could be validated and completed by companies involved in these operations

Template known risks/barriers for upstream operations



Goal of Guidance Document*

- Would allow companies to rapidly ask and answer key process safety questions:
 - Have we clearly described the risks and the barriers?
 - Has this been done in a way that is readily accessible to those who have to apply the barriers?
 - Do we have both preventative and mitigating barriers in place?
 - Is the “health” of our barriers known?
 - How do we monitor and report on process safety barriers?

**Taken from Noetic slide*

Advantages of Practical Method

- “Standard” approach understood (and in many cases already applied) by large, sophisticated companies
- Manageable approach capable of being applied by smaller, ops specific companies
- Builds on existing models and industry knowledge:
 - Based on accepted process safety causation models and an existing, accepted PHA approach
 - Leverages and pools existing industry knowledge of major risks by operation type
 - Leverages and pools existing industry knowledge of effective barriers
- Provides companies an accelerated path to identify areas of weakness that require improvement
- If lowering implementation effort leads to more widespread adoption—it also becomes a potential platform to facilitate bridging process safety systems in multi-contractor sites

For a full copy

- If you are interested in the strategy paper as written, email safety@enform.ca for a copy.