GREY PAPER

# The Board’s Blind Spot

*Directors Who Oversee Financial Risk with Rigor but Accept Process Safety Reporting at Face Value*


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## Executive Summary

Boards of directors in chemical and pharmaceutical companies apply rigorous discipline to financial oversight — yet frequently accept process safety reporting at face value. This is the board's blind spot: not a lack of concern, but a structural failure to apply equivalent governance rigor to a risk that can be more consequential than any financial exposure on the balance sheet.

The blind spot persists for three reasons. Process safety risk is discontinuous and largely invisible — a plant can deteriorate for years without a major incident, making lagging metrics unreliable as governance tools. Regulatory compliance is consistently mistaken for management system effectiveness, when they measure fundamentally different things. And the reporting structures that connect plant-floor reality to the boardroom are prone to filtering out the warning signs that matter most.

Drawing on CCPS analyses of major incidents across chemical, petroleum, pharmaceutical, and utility sectors, share prices are shown to begin declining immediately after an incident and may continue falling for a year or more. The Marsh 100 Largest Losses report documents average property damage of $330 million per major incident, with business interruption losses typically running 2 to 3 times that figure and in some cases 11 times greater. The BP Texas City explosion in 2005 resulted in total costs exceeding $2.1 billion — and the independent Baker Panel named the board directly. At DuPont, the CSB investigated three fatal incidents at company facilities in five years.

The solution is not for boards to become operational. It is for boards to govern process safety with the same structural discipline they bring to financial oversight: approving risk criteria, receiving leading indicators, obtaining independent audit findings, and holding the CEO accountable for process safety leadership that is visible and consistent from the boardroom to the plant floor.

Boards that close this gap protect enterprise value, fulfill their governance obligations, and demonstrate the leadership that chemical and pharmaceutical manufacturing genuinely requires.

## The Governance Blind Spot: Financial Rigor vs. Process Safety Complacency

A pattern repeats itself across the chemical and pharmaceutical industries. A board that challenges management rigorously on capital allocation, earnings quality, and risk exposure accepts Process Safety Management System (PSMS) reporting at face value. The PSMS is described as robust. Metrics are presented. The safety update receives 15 minutes on the agenda. The board moves on.

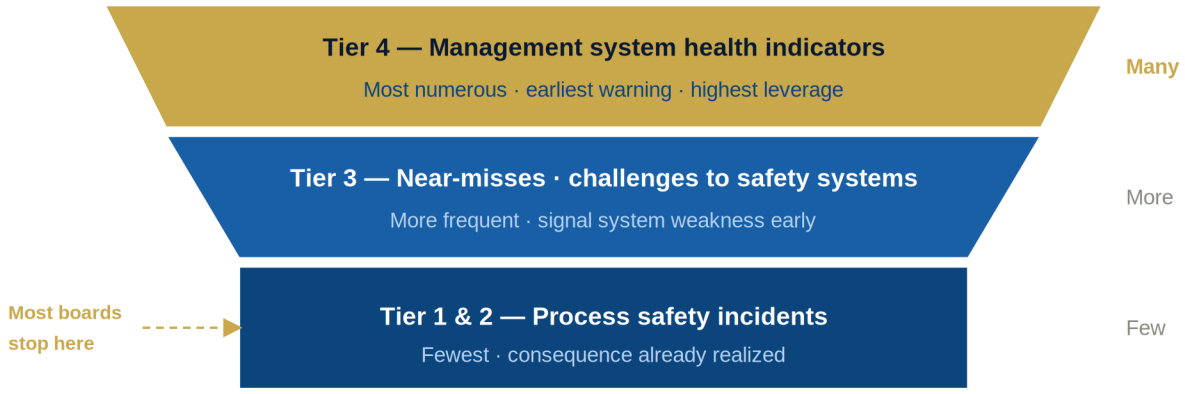
Then an incident occurs. An investigation follows. And the questions come quickly: What did the board know? What did they ask? What governance did they actually exercise? The answers expose a gap that had been invisible for years. The PSMS existed on paper. The compliance record was clean. What was missing was a board that understood the difference between documentation and effectiveness, and had the framework to ask about it.

> *"Process safety risk is not like financial risk. It is discontinuous and largely invisible. A plant can deteriorate for years without a major incident — which is then mistaken for evidence that the governance is working."*

The consequences of this blind spot are not hypothetical. Drawing on CCPS analyses of major process safety incidents, share prices begin declining immediately after an incident and may continue falling for a year or more. The Marsh 100 Largest Losses report documents average property damage of $330 million per major incident — with business interruption losses typically running 2 to 3 times that figure. The full financial picture is addressed in the Business Case section below.

This is not primarily a knowledge problem, though knowledge matters. It is a structural problem — one that can be identified, understood, and corrected.

**From Lagging to Leading: What Boards Should Track (API RP 754)**




*The wider the tier, the more data available — and the earlier the opportunity to prevent incidents*

## What the Evidence Shows

Two cases from the refining and chemical processing industry illustrate the governance blind spot clearly. Both involve companies with strong safety reputations. Both involve management system

failures that were visible before the incident to those paying close enough attention. And both produced independent findings that named board-level and executive-level governance as part of the problem.

## BP Texas City (2005): The Board Named Directly

On March 23, 2005, an explosion at BP's Texas City refinery — a land-based chemical process facility — killed 15 workers and injured more than 170 others. Total costs including settlements exceeded $2.1 billion.

Beginning in 2002, BP commissioned studies that identified serious safety problems at Texas City. Those findings were shared with executives in London. The response was inadequate — and in 2005, BP challenged its refineries to cut another 25 percent from their budgets. The CSB concluded the disaster was caused by organizational and safety deficiencies at all levels of BP Corporation, with warning signs present for several years without effective intervention.

The Baker Panel — chaired by former U.S. Secretary of State James Baker — was explicit: BP's Board "can and should do more to improve its oversight of process safety." The Panel found that BP's corporate leaders had set a positive tone on personal safety but had not done so for process safety. The board was monitoring the wrong metrics and drawing the wrong conclusions from them. The Panel noted its findings were not unique to BP and were intended for a broader industry audience.

## DuPont La Porte (2014): When the Gold Standard Fails

DuPont has long been regarded as the gold standard of chemical industry safety. On November 15, 2014, approximately 24,000 pounds of highly toxic methyl mercaptan were released inside a manufacturing building at its La Porte, Texas insecticide plant. Four workers died. The CSB investigation found flawed engineering design, inadequate safeguards, and safety-critical maintenance overdue for nearly a month. The La Porte incident was the third CSB investigation into a fatal accident at a DuPont facility in five years. The facility was ultimately closed.

**KEY TAKEAWAY FROM BOTH CASES**

Neither BP nor DuPont lacked a Process Safety Management System. What both lacked was governance structures that could distinguish between a management system that *exists* and one that is actually *working*. That distinction — between documentation and effectiveness — is precisely what board oversight is supposed to provide.

# Why the Blind Spot Persists

## 1. Process safety risk is invisible until it isn't

Financial risk is continuous and visible. Process safety risk is discontinuous and largely invisible — a plant can operate for years while its management systems quietly deteriorate, safety-critical equipment falls behind on maintenance, and culture gradually normalizes deviation from standards. None of this shows up in lagging incident metrics. Tier 1 and Tier 2 rates measure what has already happened. Three years without a major incident looks like evidence that governance is working. It may be — or the organization may have been fortunate.

## 2. Compliance is mistaken for effectiveness

Most boards receive process safety reporting through a compliance lens: Are regulatory requirements being met? Have required audits been completed? Are incident rates within acceptable ranges? These are necessary questions. They are not sufficient ones.

**THE CRITICAL DISTINCTION**

**Compliance** answers the question: Do the policies exist?

**Effectiveness** answers the question: Are they actually working?

*Boards that only ask the first question are governing with one eye closed. Both BP Texas City and DuPont La Porte were operating with documented management systems. The systems were not working.*

Regulatory compliance is the floor of process safety performance, not the ceiling. Facilities with clean compliance records can have management systems that are not functioning, cultures that normalize deviation, and safety-critical barriers maintained on paper but not in practice.

## 3. Reporting structures filter what the board sees

Process safety information reaches the board through the CEO or a senior executive who has synthesized and summarized it. That is appropriate — boards should not be in operational details. But the synthesis creates a filtering problem. Warning signs visible at the plant level — repeat audit findings, deferred safety-critical maintenance, near-misses not investigated, safe operating limit exceedances, a culture that quietly tolerates shortcuts — can be invisible at the board level. In organizations where culture is under pressure, reporting often reflects how management would like things to appear.

# The Executive Role: Accountability That Cannot Be Delegated

## The CEO as Chief Process Safety Officer

The CCPS framework is unambiguous: the imperative for process safety must be driven by the CEO, with the support of the board. Not delegated to the process safety function. Not owned by HSE. Driven by the CEO, visibly and consistently, from the boardroom to the front line.

This means the CEO commissions and ensures the rigorous development of risk criteria, approves them with the board, and drives regular reviews — including the status and trajectory toward meeting them. It means the CEO's decisions and resource allocations visibly reflect those criteria — not just in policy language, but in what gets funded, what gets deferred, and what behaviors get rewarded or corrected. And it means the CEO creates a culture where process safety problems are surfaced, not buried.

The difference between a CEO who performs this role and one who talks about it is measurable. It shows up in leading indicators, near-miss reporting rates, whether audit findings get closed, and ultimately in incident outcomes.

## The operations executive: dual accountability

In many chemical and pharmaceutical companies, senior operations executives — the COO, VP of Operations, or equivalent — carry a dual role: operationally accountable for process safety performance, and often serving on the board or as the primary management liaison to board oversight. That dual role can strengthen governance when structured deliberately. It can also compromise governance when the same executive who is responsible for the results being reported is also the primary interpreter of those results for the board. The same logic that leads companies to have independent audit committees applies here.

> *"Culture starts at the top. It is shaped less by what leaders say than by what they consistently do — and what they do when production pressure conflicts with process safety."*

# What the Board Actually Owns

The board's role in process safety is governance, not operations. The board does not run the PSMS — that is management's job. The board assures itself that the PSMS is working and that the executive team is discharging its process safety obligations with the rigor the risk requires.

**THE THREE BOARD GOVERNANCE DIMENSIONS**

**1. Approve and understand risk criteria**
Risk criteria define what level of risk the company will and will not accept — as fundamental to process safety governance as a credit policy is to financial governance. Boards should approve them formally and review them periodically.

**2. Verify management system effectiveness — not just existence**
The PSMS must be working, not just documented. This requires leading indicators of management system health before incidents occur, not lagging metrics that measure past performance.

**3. Ensure independent oversight**
Independent process safety audits reported directly to the board — not filtered through the management team whose performance is being assessed — are essential for closing the reporting gap.

## Leading indicators: the most underutilized governance tool

A board that receives only Tier 1 and Tier 2 incident rates is governing in the rearview mirror. Effective boards receive a balanced set of leading indicators across all four API RP 754 tiers:

- Tier 4 — PSMS Health Metrics: overdue safety-critical maintenance and inspection by facility, near-miss reporting rates, investigation closure times, learnings and management system corrections from near-misses and challenges to safety systems
- Tier 3 — Challenges to Safety Systems & Near-misses
- Audit finding closure rates and repeat findings across audit cycles
- Safe operating limit exceedances
- Progress against risk reduction goals established in prior hazard assessments

These metrics tell the board whether the management system is healthy before it fails — whether safeguards and barriers are fit to serve. Repeat audit findings are a particularly important signal — they indicate that problems are being identified but not resolved, which is a governance failure, not a technical one.

**The Governance Gap: Before and After**

| WITHOUT EFFECTIVE GOVERNANCE | WITH EFFECTIVE GOVERNANCE |
|---|---|
| • Lagging metrics only | • Leading + lagging indicators |
| • Compliance = effectiveness | • Effectiveness explicitly verified |
| • Filtered reporting to board | • Independent audit to board |
| • No independent audit channel | • Risk criteria formally approved |
| • Risk criteria unapproved | • CEO held accountable |

# What Good Process Safety Governance Looks Like

Companies where board-level process safety governance works well share observable structural and behavioral characteristics. The following checklist reflects both the CCPS framework and practical experience assessing governance across chemical and pharmaceutical operations.

| Board Process Safety Governance Checklist | |
|---|---|
| **Structure & Composition** | |
| • Board or committee charter explicitly includes process safety governance | ☐ |
| • At least one director has substantive process safety or operational process expertise | ☐ |
| • Where executive directors sit on the board, independent process safety input is obtained through a separate channel | ☐ |
| **Risk Criteria & Metrics** | |
| • Risk criteria formally approved at board level within the past three years | ☐ |
| • Board reporting includes leading indicators, not only Tier 1/Tier 2 incident rates | ☐ |
| • Board can describe how reported metrics connect to the risk criteria it approved | ☐ |
| **Audit & Independent Oversight** | |
| • Independent process safety audits conducted on a defined cycle and reported directly to the board or safety committee | ☐ |
| • Repeat audit findings explicitly tracked and escalated to board attention | ☐ |
| **CEO & Executive Accountability** | |
| • CEO and executive compensation frameworks include process safety performance metrics tied to both leading indicators and management system effectiveness | ☐ |
| • Board can describe specific evidence that CEO process safety leadership is visible at the facility level, not only in policy language | ☐ |
| • Process safety receives board agenda time proportional to the risk the company carries | ☐ |

## A practical implementation roadmap

For boards that recognize gaps in their current governance posture, the following phased approach reflects what is realistic and high-impact.

| Timeframe | Priority Actions | Success Indicators |
|---|---|---|
| **Year 1** | • Formally approve or reaffirm risk criteria<br>• Establish leading indicator dashboard for board reporting<br>• Define process safety in board/committee charter<br>• Commission independent PSMS effectiveness assessment | Risk criteria document approved<br>Leading indicator report delivered quarterly |
| **Year 2** | • Establish independent audit reporting protocol to board<br>• Refresh committee charters to include PS oversight explicitly<br>• Incorporate PS performance metrics into CEO/executive framework<br>• Assess board composition for process safety expertise gaps | Independent audit channel operational<br>CEO/executive scorecard includes PS metrics |
| **Ongoing** | • Review leading indicators at every board meeting<br>• Track repeat audit findings to closure<br>• Independent governance assessment every 3 years<br>• Measure: declining near-miss investigation cycle times, closing audit findings, improving leading indicators, and management system upgrades driven by investigation findings | 90%+ audit findings closed on schedule<br>Declining near-miss investigation cycle times<br>Improving Management System Health Metrics |

## Questions Worth Asking

The shift from performative to substantive process safety governance often begins with a different set of questions. The following tend to surface the gap between what is being presented and what is actually true.

**FOR THE BOARD**

**1.** What are our risk criteria, and when did the board last approve them? How many current processes carry risks in elevated or unacceptable zones of our risk matrix?

**2.** What leading indicators are we tracking — beyond Tier 1 and Tier 2 rates — and what are they telling us about management system health right now?

**3.** When was our last independent process safety audit, what did it find, and how many findings remain open?

**4.** Are any audit findings appearing for a second or third time? If so, what is preventing closure, and who is accountable?

**5.** Is there any facility where the gap between our documented standards and actual practice concerns us?

**6.** How does the board obtain process safety input independent of the management team whose performance is being assessed?

**7.** What near-misses in the past year had the potential to become major incidents? What changed as a result?

**FOR SENIOR EXECUTIVES**

**1.** How do you know — not believe, know — that the PSMS is actually working at the plant level, not just that the policies exist?

**2.** What is the state of safety-critical maintenance and inspection across our facilities? What is overdue, and what is the plan?

**3.** Where are the facilities where process safety culture is weakest? What specifically is being done, and how are we measuring progress?

**4.** When did you last spend meaningful time at a facility specifically focused on process safety — a substantive review of management system performance?

**5.** What would have to be true for you to be confident that a near-miss would be reported and investigated thoroughly at every facility in your portfolio?

These questions are not adversarial. In organizations where the culture is strong, management welcomes them. In organizations where the culture is under pressure, the questions surface problems that need to be surfaced — which is precisely the function governance is meant to serve.

## The Business Case Is Stronger Than Most Boards Realize

Process safety is sometimes treated as a compliance obligation — a cost center that consumes resources without generating return. The evidence does not support that framing.

Drawing on CCPS analyses of major process safety incidents across chemical, petroleum, pharmaceutical, and utility sectors, share prices are shown to begin declining immediately after an

incident and may continue falling for a year or more. The Marsh 100 Largest Losses report documents average property damage of $330 million per major incident, with business interruption losses typically running 2 to 3 times that figure and in some cases 11 times greater. The BP Texas City explosion resulted in total costs including settlements exceeding $2.1 billion. Major incidents divert organizational capacity from growth to damage control for years. They can force asset sales at distressed valuations.

The positive case is equally compelling. Companies that manage process safety with rigor report greater equipment reliability, reduced unplanned downtime, improved yields, and lower maintenance costs — all flowing from the same operational discipline that prevents incidents. Process safety and operational excellence are not in tension. They are expressions of the same underlying management capability.

> *"Companies that get process safety right do not think of it as a cost. They think of it as the foundation of operational excellence — the discipline that makes sustained performance possible."*

The board's role is to ensure that the company is building on that foundation — not merely describing it.

## How Kenan Stevick Can Help

Kenan Stevick works directly with boards, CEOs, and general counsels on process safety governance. He co-authored the CCPS Process Safety Leadership from the Boardroom to the Front Line — the publication that defines the standard of care in this area — and brings 44 years of practical experience in chemical and pharmaceutical manufacturing, including 34 years at Dow Chemical (Fortune 50) in operational and technical leadership.

For boards and executive teams, Kenan provides process safety governance assessments that evaluate whether oversight structures, reporting frameworks, and management system review processes are adequate for the risks the company carries. These are not compliance audits. They are honest evaluations of whether governance is substantive or performative — and where the gaps are.

Kenan co-developed and personally delivers the CCPS executive leadership workshop on process safety governance, conducted for more than 20 executive leadership teams and adopted by the American Chemistry Council as a standard intervention for member companies.

For legal proceedings arising from process safety incidents, Kenan can evaluate whether board-level and executive governance met the applicable standard of care and provide expert

testimony on the governance and oversight obligations of directors and senior executives.

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## About the Author

Kenan Stevick is a process safety professional with 44 years of experience in chemical and pharmaceutical manufacturing, including 34 years at Dow Chemical (Fortune 50) in operational and technical leadership. Across two positions, Kenan led the corporate initiative that achieved a cumulative 90% reduction in Tier 1 incidents over ten years — including a 75% reduction in Tier 1 and Tier 2 incidents in his first four years as Chief Process Safety Engineer, preventing more than $50 million in annual incident costs. These results remain industry benchmarks. He co-authored two CCPS publications that define the standard of care in process safety governance: Process Safety Leadership from the Boardroom to the Front Line (2019) and Guidelines for Process Safety in Outsourced Manufacturing Operations, Second Edition (2026). He co-developed and personally delivers the CCPS executive leadership workshop on process safety governance, adopted by the American Chemistry Council as a standard intervention for member companies. He is a Fellow of CCPS (2015) and holds the CCPS Certified Process Safety Professional (CCPSC) designation.

*This grey paper draws on concepts and frameworks from Process Safety Leadership from the Boardroom to the Front Line (CCPS, 2019), co-authored by Kenan Stevick, and from experience conducting process safety governance assessments and executive leadership workshops across the chemical industry. Share price and financial impact data referenced from:*
*CCPS, The Business Case for Process Safety, 4th Edition (AIChE, 2018); Marsh Ltd., The 100 Largest Losses 1974–2015 (2016). BP Texas City incident data from the CSB Final Investigation Report (2007) and the Baker Panel Report (2007). DuPont La Porte data from the CSB Final Investigation Report (2019). This paper is intended for informational purposes and does not constitute legal advice.*