Operating on the Edge

Achieving a competitive edge requires a system that drives continuous improvement and protects people, the environment and your business.

Fit for the Edge

If your business is working with hazardous materials or mechanical operations, in remote locations or in extreme environments, you’re working on the edge.

Guarding against that one-in-a-million chance of a major industrial trauma is as important to your workplace as its everyday safety activities.

Organisations that have experienced few or no severe incidents may be relying on their good fortune rather than an alert safety culture and operating discipline. Others, making improvements to business structures and processes may be in danger of overlooking the need to manage both the inherent and unforeseen risks.

Whether your business is a higher or lower hazard operation, working with the DuPont team to improve your PSM strengthens your organisation’s confidence in its physical condition, risk awareness and incident preparedness. Gaining a reputation for operational and safety excellence, driving for greater performance and becoming an employer of choice will see your business achieving that competitive edge.

DuPont: World Class PSM

DuPont, a science company with 175 operations in 70 countries, is the world’s benchmark for safety excellence. Rigorous management of risk and process safety has been a cornerstone of our operating culture for more than 200 years.

DuPont pioneered the concepts and implementation of a PSM system in the 1960s. By the late 1980s the US Occupational Health and Safety Administration (OSHA) and Environmental Protection Agency had recognised the benefits of the DuPont system and sought our assistance to develop the PSM regulations that govern industry today.
Drawing on our world-class owner/operator experience, we have been helping other organisations develop effective and sustainable safety practices for over 30 years.

DuPont process safety consultants have profound experience in engineering and managing operations within the major hazard industries. Our expert team can assist your organisation to strengthen its systems for the comprehensive control of PSM.

The DuPont Approach

DuPont PSM involves the integration of three broad dimensions:

- **Facilities** to manufacture and handle hazardous materials
- **Technology** of the process
- **Personnel** who operate, maintain, and support the process.

Integrating these dimensions are the core forces of Management, Leadership and Commitment. Little can be achieved without the engagement of these cultural forces and DuPont focuses on harnessing them to drive the success of the PSM project and to support ongoing, sustainable improvement. Our owner-operator experience is manifest in our consultants’ capability to inspire and facilitate the cultural changes required.

The DuPont approach is consistent with, and exceeds, a broad range of regulatory and professional guidelines in its comprehensive control of technology, facilities and personnel safety. These include OSHA PSM Standard 29 CFR 1910.119 and EPA RM Program Rule 40 CFR Part 68.

The basis of an organisation’s PSM system is an established safety culture, actively supported and led by committed management teams. Underpinning the three management areas, technology, facilities and personnel, are 14 constituent elements.

**The DuPont approach assesses and develops each of the elements in the critical areas of:**

- **Organisation**: how the element is supported through management structures.
- **Process**: how the element is supported through procedure.
- **People**: how the element is supported through the behaviours and capability of those who work with it.
- **Technology**: how the element is supported through effective use of information systems.

These areas for scrutiny ensure that each of the elements is working with the most effective group structures, documented procedures and human and technology capabilities to excel within the entire integrated system.
Facilities

World class safety, optimal production yields and performance rely on rigorous asset management. The design, assembly and maintenance of any system or process equipment must be appropriate and approved for both the application's and the manufacturer's specifications.

Quality Assurance focuses on ensuring the design of process equipment encompasses both the Process Safety Information and all the relative technology.

Pre-start-up Reviews and ongoing management of mechanical integrity mitigate the risk of working in a high hazard environment. Pre-implementation analysis of even ‘subtle’ changes to a facility, such as a pipeline or component substitution, introduces a methodical and anticipative approach to risk management.

Technology

Every technology evolves and improves with experience. For a business to grow and prosper its processes and technology must be reviewed periodically to ensure optimal performance.

One minor technical change can have far reaching consequences. To evolve technology successfully a business must employ tight control over the change process, starting with pre-implementation analysis and including a review of all downstream processes.

Process Hazards Analysis (PHA) combines science, skill, and judgment to identify, evaluate, and develop methods to control significant hazards. PHA is effective in determining where an organisation's PSM related risks reside and in ensuring the involvement of the area stakeholders.

Operations that are aware and vigilant keep well audited process safety information. Critical risk information, as well as technology and process descriptions are not only the basis for risk analysis, but could be the critical blueprint to disaster recovery.

Personnel

People keep people safe and DuPont recognises that they are the one essential ingredient that is interwoven through all the elements of PSM. The knowledge pool, personal engagement and effective management of the workforce are vital to implementing and maintaining world class PSM.

A world class organisation is characterised by a workforce of employees and contractors who are engaged in continual learning and who work with management to maintain and improve safety auditing, incident investigation and emergency planning and response.

Properly trained personnel are a requirement for keeping process equipment and machinery operating safely. Lack of adequate training has been identified as one of the root causes of many serious incidents.

Loss of minimum levels of experience and knowledge through personnel movements and organisational change potentially invalidates prior hazard assessments. The establishment and implementation of a procedure for managing personnel change is essential for an orderly progression of qualified personnel in critical positions.
An Engagement with DuPont

The objective of a DuPont PSM engagement is to assist your business in identifying areas of strength and opportunities for development, to keep you fit for the edge. The implementation process occurs in a top-down method, from the Corporate level to the Business level and finally to the Local Site level. A DuPont engagement process is implemented in phases:

**Phase 1 of the engagement will:**
- Conduct a detailed assessment through interviews, observations, process analysis & mapping, surveys, safety data analysis and project reviews,
- Utilise the extensive DuPont database of case studies and safety perception survey material and results to benchmark your organisation’s performance against the world class standard,
- Determine whether existing engineering, operational, maintenance, and management controls are sufficient to minimise the potential for serious process-related incidents or injuries,
- Comprehensively report on the identified strengths and the opportunities for improvement.

**Phase 2 of the engagement will:**
- Run an envisioning workshop for the key stakeholders in your organisation and communicate its findings,
- Validate the business case for change and obtain approval from stakeholders for implementation,
- Work with Corporate, Business and Site Leadership Champions to establish the PSM Implementation Roadmap.

**Phase 3 of the engagement will:**
- Evaluate pilot testing of identified PSM elements to calibrate a successful program implementation,
- Assist in the formation of the organisation’s PSM Elements Implementation Team and the help to develop the team charter,
- Provide training for business champions and stakeholders to develop their awareness of the organisation’s expectations and individual responsibilities and accountabilities,
- Support organisational teams involved in the governance and execution of the PSM program implementation, by coaching and guiding leadership.

**Phase 4 of the engagement will:**
- Help develop or improve the PSM Governance Process in line with the Implementation Roadmap,
- Provide direction for the effective implementation of standards (e.g. Mechanical Integrity and Quality Assurance (MIOA) practices) for all hazardous processes,
- Coach personnel on applying PSM tools (e.g. Management of Change Process Outputs, Process Hazards Analysis, Pre-Start-up Safety Review) for select processes,
- Review all critical procedures and systems to ensure compliance and integration of safety requirements,
- Establish a set of lagging, current and leading indicator metrics for the ongoing review of process safety performance.