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## **Are You in Control? The Bowtie Approach to Risk and Barrier Management**

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### **ABSTRACT**

*In today's dynamic and often unpredictable environment, safety managers face the critical challenge of ensuring that their organisations are prepared to manage major hazards effectively. A fundamental question that arises in this context is, "Are you in control?" To answer this question, safety professionals must first identify potential incident scenarios, assess the barriers in place to mitigate these risks, and evaluate the information available to confirm the effectiveness of these barriers.*

*The Bowtie methodology offers a comprehensive framework for advanced barrier management, enabling organisations to gain a clearer understanding of their risk landscape. By visually mapping out potential hazards and the associated barriers, the Bowtie approach simplifies complex risk scenarios, making them more understandable and communicable across all levels of the organization. This visual representation not only aids in identifying gaps in safety measures but also fosters a shared understanding of risk management amongst team members.*

*Implementing the Bowtie methodology allows organisations to take a proactive stance in their safety management processes. By continuously auditing existing barriers and learning from incident data, organizations can ensure that their risk profile remains as low as reasonably practicable (ALARP). Achieving ALARP is crucial, as it enables organizations to protect their employees and assets while balancing safety with operational feasibility. The integration of real-time system data further enhances this process, providing valuable insights that can inform decision-making and drive continuous improvement.*

*In this presentation, I will explore the key principles of the Bowtie methodology, its application in real-world scenarios, and the benefits it offers for organisations striving to enhance their safety culture. Attendees will gain insights into how the Bowtie approach can transform their risk management practices, enabling them to answer the critical question of control with confidence. By fostering a culture of safety and continuous improvement,*

*organisations can not only protect their employees and assets, but also enhance their overall operational resilience in an ever-changing world.*

## **KEY WORDS**

*Safety*

*Major Accident Hazards*

*Bowtie Methodology*

*Risk Assessment*

*Barrier Management*

*Proactive Safety Management*

*ALARP (As Low As Reasonably Practicable)*

*Continuous Improvement*

*Visualising Risk*

*Safety Culture*

*Risk Management*

*Control*

*Communication*

## **BIOGRAPHY**



Keeran Sunker – Senior Technology Specialist

Keeran Sunker is a Process Engineer with 16 years of experience across multiple industries including Oil & Gas, Industrial Gases, Ore Processing, and Petrochemical. His career spans technical support to operations, design and governance, and direct operations management. Currently, Keeran serves as the Senior Technology Specialist at Wolters Kluwer – Enablon, where he applies his deep technical and operational expertise to lead digital transformation initiatives in EHS for enterprise clients in sectors such as energy, mining, and aviation. He holds a Bachelor of Science - Chemical Engineering (Hons) degree and an MBA from Henley Business School, majoring in Sustainability and Strategy.

Keeran is passionate about helping organisations address real-world EHS challenges through innovative software solutions that drives sustainability, improve operational efficiency, and deliver measurable value.

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