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Barrier Management: A Structured Approach to Developing Bowtie Diagrams with a View on Reliability Prediction and Performance Monitoring

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Oil and Gas Industry, Petrochemical and Refineries and other similar business activities are inherently capital intensive and exposed to risk. This includes exposure to commodity price risk as well as operational expenditure risk. Identification of inefficiencies to decrease costs is key to optimize the risk profile by effectively managing economic margins and safeguarding life, property and the environment. The benefits of using Bowtie diagrams have been realized by organizations world-wide across a variety of business sectors. This paper introduces the approach intended to demonstrate risks As Low As Reasonably Practical into the optimization of barrier management where process safety-related information is taken by disciplines being pushed for further cost cutting without a compromise on safety and downtime. The results demonstrate the required categorization of threats pathways, barriers and consequences to provide more than a pictorial representation but also an input to management of assets' performance and anomalies (if found). Others working in these areas agree that Bowties should highlight weak organizational controls, enabling proactive, sustainable strategies for reducing risk with more focus on performance monitoring, seeking short-term opportunities to reduce losses, overdue actions and improving operating efficiency.

Biography

João has completed 20 years experience in Risk consulting projects in the oil and gas, petrochemical and mining industries since 1999. His experience has largely been centered on the risk assessment of refineries, onshore process plants and offshore facilities in South America, Middle East and North Sea.