Understanding, Measuring and Managing Uncertainty – The Role of RBI

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Abstract

This presentation will cover the impact of uncertainties for Risk Management as part of the Risk-Based Inspection process and how the RBI process can be used to understand, Measure and Manage them. People (expertise), work processes and technology are all important aspects of a credible and effective program. The references used in this particular presentation are the latest editions of API RPs 580 (Risk Based Inspection), API RP 581 (Risk Based Inspection Technology) and API RP 754 (Process Safety Performance Indicators for the Refining and Petrochemical Industries) as examples of recognized and generally accepted practices.

Consistency and adherence to inspection effectiveness confidence level rules are important in the RBI process and for managing uncertainty, as are other options to manage risk drivers, especially those associated with probability of failure. As Bayesian logic is used in the 581 RBI technology and process, a thorough explanation of the sensitivities and importance of realistic and consistent application of rating inspection effectiveness is critical to accomplish a credible, effective and sustainable RBI program. All RBI practices in the process industries are based on relative risk. As a result, if we lose consistency and credibility the risk rankings are of little practical good. The focus of this presentation is demonstrating value in the RBI process via effective management of uncertainties, how to achieve this credibly and consistently and the role of inspection in understanding, measuring and managing the impact of uncertainties.